JOURNAL OF THE INDIAN MEDICAL ASSOCIATION:
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Date of Publication : 15th November, 2018

NOVEMBER 2018

Registration No. KOL RMS / 476 / 2017-19
RNI Regd. No. 2557/1957

If not delivered please return to
Journal of the IMA (JIMA)
Sir Nilratan Sircar IMA House,
53 Sir Nilratan Sarkar Sarani
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Printed and Published by Dr Kakali Sen on behalf of Indian Medical Association and printed at Prabaha, 45A, Raja Rammohan Sarani, Kolkata 700009, and Published from Sir Nilratan Sircar IMA House, 53 Sir Nilratan Sarkar Sarani (Creek Row), Kolkata - 700 014. Editor: Dr Samarendra Kumar Basu

₹10

JOURNAL of the INDIAN MEDICAL ASSOCIATION

Volume 116 ♦ Number 11 ♦ November 2018 ♦ Kolkata

Largest Circulated Medical Journal in India

ISSN 0019-5847

89TH YEAR OF PUBLICATION

JIMA

Official Publication of the Indian Medical Association
Indexed in Index Medicus

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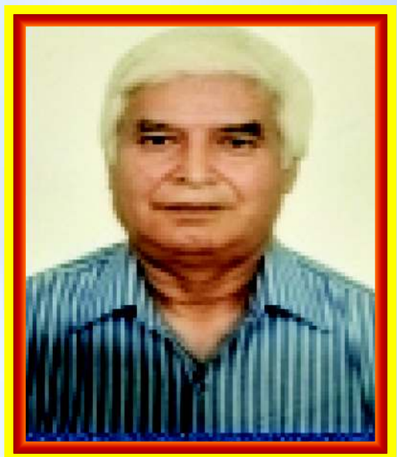

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JOURNAL of the INDIAN MEDICAL ASSOCIATION

Volume 116 • Number 11 • Kolkata • November 2018 ISSN 0019-5847

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Editorial

Gynaecological Cancers

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There are five gynaecological cancers – womb, ovarian, cervical, vaginal and vulval – but awareness levels of these cancers are very low.

There are common signs and symptoms across some of the gynaecological cancers such as abnormal vaginal bleeding. Other signs are less obvious, and could be due to different health conditions, for example abdominal bloating can indicate Irritable Bowel Syndrome.

Each year in the UK, over 21,000 women are diagnosed with a form of gynaecological cancer. This equates to 58 women receiving this life-changing news every day. Sadly 21 women will die from a gynaecological cancer every day.

That's far too many mothers, wives, daughters, partners and friends in our opinion, and at The Eve Appeal we're determined to change this. Part of our mission is to ensure that women and men are aware of what to look out for, because recognising gynaecological cancer symptoms can mean an earlier diagnosis, leading to a better outcome.

Gynaecological cancer and the menopause :

Some women are affected by gynaecological cancers before the menopause. Menopause does not cause cancer, but your risk of developing cancer does increase as you get older.

Coping with a cancer diagnosis :

Being diagnosed with cancer, and the treatment that follows, can be a very difficult thing to cope with. The support of family, friends, healthcare professionals and other people who have had a similar experience can be hugely helpful during this time.

As well as information about diagnosis, treatment and management of gynaecological cancers, some of the organisations linked to in this section of the site include information about how you can access emotional support.

Preventing gynaecological cancers :

Leading a healthy lifestyle can help to prevent cancers. During and after menopause is no different. The following measures will help you reduce your risk of cancer:

Take part in the cervical and breast screening programmes provided by the NHS

- Exercise
- Eat a healthy diet
- Don't smoke and avoid second-hand smoke
- Maintain a healthy body weight

Original Article

Safety and efficacy of triclosan-coated polyglactin 910 suture in prevention of surgical site infection in postpartum women : A randomized controlled trial

Asha Dixit[1], Purnima Nadkarni[2], Ashok Thakkar[3]

The objective of present study was to compare the safety and efficacy of two triclosan-coated polyglactin 910 sutures, MITSU AB and VICRYL Plus, in postpartum women. This was a prospective, multicenter, single-blinded, randomized controlled trial conducted at two clinical settings in India. Between February 2017 to July 2017, a total of 122 women were enrolled and randomly assigned (1:1) to either MITSU AB or VICRYL Plus (N=61 women in each arm) before surgical incision closure during episiotomy or caesarean section. All women were followed at 14 days, 30 days, and 6 months after the surgery. The safety endpoint was overall wound dehiscence recorded at each follow-up (FU). Efficacy endpoints were surgical site infection (SSI) rate at each FU and length of hospital stay. The suturing was performed at abdominal, uterine, vaginal and perennial areas and was significantly balanced in both arms. None of the women reported wound dehiscence nor reported SSI in both arms. The length of hospital stay did not differ significantly between MITSU AB and VICRYL Plus arms (3.25 ± 0.62 days *versus* 3.37 ± 1.57 days; p=0.58). There was no incidence of an adverse event or serious adverse event up to 6 months. The results of the study showed comparable safety and efficacy of the MITSU AB to VICRYL Plus suture in women requiring surgical closure during episiotomy or caesarean section. The study is registered at the clinical trial registry of India (CTRI/2017/01/007736).

[*J Indian Med Assoc* 2018; **116**: 12-4 & 35]

Key words **: Antimicrobial sutures, caesarean section, episiotomy, polyglactin 910, postpartum infection, surgical wound dehiscence, triclosan.**

Surgical site infections (SSIs) are persistent but preventable health care-associated infections. SSIs not only lead to substantial morbidity, mortality and extended hospital stay, but also increase health-care cost[1]. The epidemiology of postpartum SSI has not been well characterized in developing countries. The evidence of SSI incidences in postpartum women are scarce and of weaker quality. Several Indian hospital-based studies reported rate of SSI ranged from 3.5% to 12.6% after caesarean section[2-5]. Despite the high risk of contamination, the incidence of episiotomy infection seems to be relatively low and estimated between 0.3% and 5% depending on the setting[6].

The role of sutures in the development of SSI has been speculated by surgeons from many years[1]. Bacterial adherence and colonization were observed predominantly on suture knots and on braided sutures, and thereby increase the susceptibility of the surrounding tissue to the infections[7]. Hence, triclosan-coated sutures were developed to prevent microbial colonization on suture materials in operative wounds. After the launch of this sutures into the commercial market in 2002, its effectiveness was studied for several surgeries, including breast, abdominal, pediatric, gastrointestinal and cardiac surgeries[8]. Furthermore, triclosan-coated polyglactin 910 absorbable surgical suture is one of the non-parenteral antimicrobial prophylaxis approach recommended by the Centers for Disease Control and Prevention (CDC) in their recent guideline for the prevention of SSI[9].

MITSU AB, an absorbable polyglactin 910 surgical suture, coated with the broad-spectrum antimicrobial agent triclosan, is used for surgical incision closure in various surgeries. Although surgical incision closure with antimicrobial-coated sutures has been shown to reduce wound infections during many surgical procedures, none of the previous trials focused on caesarean section and episiotomy incisions in postpartum women. In the present study, we aim to evaluate the safety and efficacy of MITSU AB compared to VICRYL Plus in postpartum women.

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Material And Method

Study design and population :

This was a prospective, multicenter, single-blinded (patient-blinded), randomized controlled trial (RCT) comparing the safety and efficacy of two triclosan-coated polyglactin 910 sutures, namely MITSU AB and VICRYL Plus in the course of 6 months. The study protocol was approved by the local ethics committee. The study was conducted in compliance with the Declaration of Helsinki and written informed consent was obtained from all women before initiation of the study. The study was registered at the clinical trial registry of India (CTRI/2017/01/007736).

A total of 122 women (N=61 in each MITSU AB and VICRYL Plus arm) were enrolled between February 2017 to July 2017 at two centers in Gujarat, India. Patients aged ≥18 years who were undergoing surgical incision closure during an elective surgery and agreed not to participate in any other invasive study for a period of 6 months, and provided consent were included in the study. Patients with a known allergy of triclosan, history of HIV, on-going sepsis, on-going bacterial infection or already on antibiotic treatment (other than prophylaxis antibiotics given before and after surgery) were excluded. Patients with a history of prior SSI in past 1-month and those requiring other major emergency surgery were also considered ineligible for the study.

Study intervention and randomization :

Women were stratifically (block of 2) randomized in a 1:1 ratio to receive either MITSU AB™ Polyglactin 910 Suture (Meril Endo-Surgery Pvt Ltd) or Coated VICRYL® Plus Antibacterial Polyglactin 910 Suture (Ethicon USA, LLC) with PROC PLAN syntax using SAS® statistical software, version 9.3.

The MITSU AB suture is a braided synthetic absorbable sterile polyglactin 910 surgical suture used for the surgical incision closure except for ophthalmic, cardiovascular and neurological tissues. The suture is made up of a copolymer polyglactin 910 (90% glycolide and 10% L-lactide) which is then coated with a mixture of polyglactin 370 and calcium stearate; as well as the broad spectrum antimicrobial agent triclosan (≤472 µg/m). Polyglactin 910 and polyglactin 370 with calcium stearate exhibit non-antigenic and non-pyrogenic properties. During hydrolysis, the copolymer degrades to glycolic and lactic acids which are then absorbed and metabolized in the body. Its 75% of the original tensile strength is retained until the initial 14 days, and 50% of its original is retained until 21 days. Complete absorption of MITSU AB suture usually takes place between 56 to 70 days with subsequent growth of fibrous connective tissue.

Study endpoints and data collection :

Safety endpoint includes overall wound dehiscence as per investigator's discrimination evaluated at post-procedure and each follow-up (FU) visit. Wound dehiscence is defined as the rupture or splitting open of a formerly closed surgical incision site. According to the CDC, it can be classified as either superficial or deep10. Efficacy endpoints include the rate of SSI (evaluated by examining surgical site at baseline, post-procedure, and each FU visit) and length of hospital stay. The criteria of CDC's National Nosocomial Infections Surveillance system were followed for the identification of SSI and their classification[10]. Length of hospital stay is calculated by subtracting day of admission from the day of discharge. The FU visits were scheduled at 14 days (±2 days), 30 days (±7 days) and 6 months (±28 days) from the day of the surgery.

Demographics, vital signs, laboratory assessment, medical history, current medications were recorded during the study via electronic-CRF data capturing system. Details of surgical procedure, any procedural complication and adverse event (AE) or serious adverse event (SAE) were documented; sonography and tissue culture were performed (if required) during the study.

Statistics :

Continuous data were presented as mean ± SD, non-continuous as median (IQR) and categorical data as counts and percentages. The data were analyzed using SAS® statistical software, version 9.3. The continuous variables were compared using Student's t-test (normal distribution) or Mann-Whitney U-test. Categorical variables among both arms were analyzed using Fisher's exact test and chi-square test, as appropriate. Length of stay in hospital was presented as mean ± SD and evaluated using Student's t-test. The P value less than 0.05 were considered statistically significant.

An assumption of the 9.4% SSI rate difference between both sutures followed by one-sided 95% confidence interval with 85% power and a significance level of 5% to prove non-inferiority (non-inferiority margin 0.09) resulted in an estimated sample size of 55 women for both arms in the study. Considering 10% discontinuation rate, total 61 women were required to enroll in each arm. Hence, we recruited a total of 122 women in the present study.

Observations

The study enrolled 122 women, 61 in both arms (MITSU AB and VICRYL Plus). None of the women reported procedural complications. All the women completed post-procedure, 14 days, 30 days and 6 months FU. The study disposition is depicted in Fig 1.

Demographics and patient characteristics in both treatment arms are summarized in Table 1. The mean age reported was 29.58 ± 5.10 years and 27.89 ± 6.44 years for MITSU AB and VICRYL Plus arms, respectively. Overall, including both arms, there were 55.74% (68/122) overweight (BMI 26-30) women and 18.03% (22/122) obese

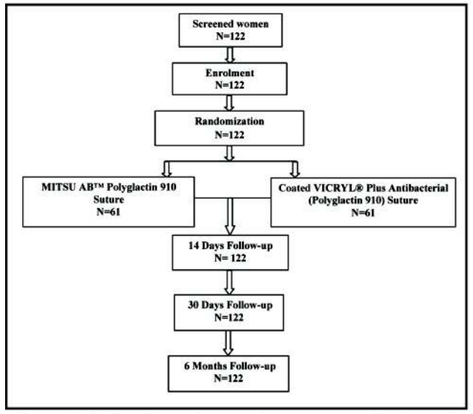

Fig 1 — Study disposition: patient enrollment, treatment allocation, and follow-up

Table 1 — *Baseline and pre-operative characteristics*

Demographics	MITSU AB N =61	VICRYL Plus N = 61	P value
Age, years, mean ± SD	29.58 ± 5.10	27.89 ± 6.44	0.11
BMI, kg/m², mean ± SD	27.44 ± 3.47	26.66 ± 3.07	0.19
BMI categories, n (%)			
BMI 19-25	13 (21.31%)	19 (31.15%)	0.45
BMI 26-29	37 (60.66%)	31 (50.82%)	
BMI ≥30	11 (18.03%)	11 (18.03%)	
Heart rate, bpm, mean ± SD	79.52 ± 5.26	78.33 ± 6.64	0.28
Systolic blood pressure, mmHg, Mean ± SD	116.23 ± 10.03	111.50 ± 6.50	0.002
Diastolic blood pressure, mmHg, Mean ± SD	75.90 ± 6.42	73.33 ± 6.81	0.03
Co-morbidities, n (%)			
Diabetes mellitus	2 (3.28%)	0	0.15
Hypertension	1 (1.64%)	3 (4.91%)	0.31
Others	1 (1.64%)	2 (3.28%)	0.56
Biochemistry			
Haemoglobin, g/dl, mean ± SD	11.76 ± 1.51	11.20 ± 2.71	0.16
WBC count, cell/mm³	11216	11467	0.68

BMI : body mass index, bpm: beats per minute,
SD: standard deviation, WBC : white blood cells

(BMI ≥ 30) women in the present study. The prevalence of diabetes mellitus (2 *versus* 0, p=0.15) and hypertension (1 *versus* 3, p=0.13) were reportedly low, in both MITSU AB and VICRYL Plus arms. No significant differences were found between the demographics, co-morbidities, and biochemistry of both arms, except for systolic blood pressure.

Suturing with either MITSU AB or VICRYL Plus intervention were performed at abdominal, uterine, vaginal and perennial areas during either lower (uterine) segment caesarean section (LSCS) or episiotomy surgeries. Majority of women underwent uterine suturing (62.30% *versus* 40.98%), followed by abdominal suturing (31.15% *versus* 47.54%) in both MITSU AB and VICRYL Plus arms. There was an insignificant difference (P=0.07) reported for all suturing sites between both arms. A significant difference (P=0.003) was reported between the numbers of stitches in both arms but, the incision lengths differ insignificantly (P=0.08). All the women received antibiotic prophylaxis before and after the surgery, which did not differ significantly between both arms. The preferred pre-operative antibiotics were a fixed-dose combination (FDC) of ampicillin and cloxacillin followed by ceftriaxone (a third generation ß-lactam antibiotics) and amikacin (aminoglycosides), intravenously. Post-operatively oral FDC of ampicillin and cloxacillin, and ceftriaxone were prescribed in the majority of women. The operational details are depicted in Table 2.

There was no case of wound dehiscence reported in both arms during 6-month FU. Moreover, none of the women presented with SSI in any arm. Length of hospital stay was 3.25 ± 0.62 days for MITSU AB arm and 3.37 ± 1.57 days for VICRYL Plus arm, which was insignificantly different (p=0.58). There wasn't any AE, or SAE reported in the study.

Discussion

The present study prospectively evaluated safety and efficacy of the two triclosan-coated polyglactin 910 sutures. The suturing was performed at abdominal, uterine, vaginal and perennial areas during the LSCS and episiotomy in 122 women. The study reported neither wound dehiscence nor SSI till 6-month FU. There is no significant difference between the lengths of hospital stay of both arms. Also, none of the women reported any AE/SAE. To the best of our knowledge, the present trial is the first one to report efficacy and safety of triclosan-coated sutures in a cohort of women requiring LSCS or episiotomy surgeries. We identified two such trials which are evaluating the efficacy of triclosan-coated suture in episiotomy (ClinicalTrials.gov: NCT02847936) and caesarean section (ClinicalTrials.gov: NCT03386240). Yet, they are currently in the recruitment phase.

The development of an antibacterial suture has been

Table 2 — *Operational characteristics*

Operational characteristics	MITSU AB N =61	VICRYL Plus N = 61	P value
Location of suturing, n (%)			
Abdomen	19 (31.15%)	29 (47.54%)	0.07
Uterus	38 (62.30%)	25 (40.98%)	
Vaginal	2 (3.28%)	6 (9.84%)	
Perennial	2 (3.28%)	1 (1.64%)	
Number of stitches, median (range)	1 (1 to 10)	1 (1 to 7)	0.003
Length of incision after suturing, median (range), cm	8 (3 to 9)	8 (3 to 9)	0.08
Length of hospital stay, days, mean ± SD	3.25 ± 0.62	3.37 ± 1.57	0.58

SD: standard deviation

under deliberation since the early 1980s. Triclosan is the broad-spectrum antimicrobial agent developed over 57 years ago and has been extensively used in disinfecting soaps, dentistry and lately in suture coating[1]. It has been evident from many studies that triclosan has no carcinogenic, genotoxic, pyrogenic, or teratogenic effects. Moreover, the use of triclosan in sutures causes extremely low systemic exposure[11]. In vitro studies showed that triclosan forms an inhibition zone around suture material and it is effective against the microbes most frequently responsible for SSI occurrence[12]. The reported primary causative pathogens for wound infection in episiotomy are Pseudomonas aeruginosa, Escherichia coli, Staphylococcus aureus, Staphylococcus epidermidis and some strains of fungi[13]. Amongst the aerobic bacterial agents causing SSI in caesarean section patients, enteric gram-negative bacilli, group B streptococci, and enterococci are the most common[14]. The antimicrobial activity of triclosan for the said pathogens was proven in the numerous in-vitro studies[1,15].

With the increase in age, especially, in women older than 40 years, the risk of SSI increases[3]. However, the studied population was quite young in the present study, and did not vary statistically between both arms (P=0.11). Obesity is a risk factor for many obstetrical complications, including post-operative wound complication[16,17]. Yet, any SSI or wound dehiscence was not reported in 55.74% (68/122) overweight and 18.03% (22/122) obese women in the study.

Wound dehiscence did not appear in any woman till 6-month FU in both arms. A meta-analysis of thirteen randomized clinical trials involving 5256 participants reported similar risk of wound dehiscence between the coated and uncoated sutures based on the limited data of four RCTs (breast surgeries, abdominal surgeries, and cardiac surgeries), suggesting that triclosan might not interfere with wound healing[18]. A large high-level RCT is needed to examine and verify the effect of triclosan-coated sutures on wound complications.

A meta-analysis found that use of triclosan-coated sutures resulted in 30% reduction in the risk of SSI, especially in adult patients, abdominal procedures, and clean or clean-contaminated incisions[19]. An Indian study of 1173 patients in a rural hospital reported 1.23% (95% CI, 0.02-2.4) SSI rate in the obstetrics surgeries[3]. The present study does not report any incidence of SSI in both treatment arms till 6-month FU. Triclosan-coated sutures could significantly decrease both the risk of readmission and the length of hospital stay, and subsequently, reduce excess medical costs on medical systems[19]. Across 92 countries, the mean length of stay after childbirth reported was 1.3 to 6.6 days[20]. The average length of the stay was 3.25 ± 0.62 days (MITSU AB) and 3.37 ± 1.57 days (VICRYL Plus) in the present study which did not differ significantly (p=0.58).

The present study has several limitations. The diversity of the patient population was restricted to the female. Nevertheless, the efficacy of triclosan-coated sutures was not compared in the postpartum women previously. The study has a considerably higher number of caesarean section surgeries than the episiotomy, which demands further strong evidence for the efficacy of triclosan-coated sutures in episiotomy. Though the sample size was calculated not to be underpowered on the basis of the previous event rates, the findings of this study could be underpowered as a result of the unexpected absence of events. However, the difference in results from the anticipated SSI event rates in the study can be explained by the stringent infection control practices in the operation room, studied clean-contaminated incisions, and strong antibiotic prophylaxis.

In conclusion, the present study showed no incidence of wound complications and infections when the caesarean section and episiotomy incisions were sutured with triclosan-coated absorbable polyglactin 910 sutures. The safety and efficacy of the MITSU AB is comparable with that of the VICRYL Plus suture.

Acknowledgement

The study was funded by Meril Endo-Surgery Pvt Ltd., India. The authors express their sincere gratitude to Bhavi Patel (Clinical Research Department, Meril Life Sciences Pvt Ltd, India) for assistance with preparation of the manuscript.

Conflict of interest :

Dr. Ashok Thakkar is a full-time employee of Meril Life Sciences Pvt Ltd, India. The other authors have no potential conflict of interest to declare.

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Original Article

Efficacy of oral Isotretinoin in viral warts

Manjulata Dash[1], Soubhagya Ranjan Tripathy[2], Tanmay Padhi[3], Nikhil Ranjan Das[4]

Viral warts are commonly seen in dermatology OPD involving all age groups. Available treatment modalities have their own limitation like unacceptable side effects or inadequate efficacy. The present study was conducted to assess the efficacy of oral isotretinoin in the management of viral warts. Male agricultural workers in their 2nd to 4th decade were the most commonly subgroup of patients. Verruca vulgaris was the most common clinical subtype seen in 52.77% of the cases. Out of all body sites, upper limbs were affected in 37.5% followed by lower limbs in 31.94% and face in 10.18%. After isotretinoin therapy, complete response was seen in 87.09% of verruca plana, 60.78% of palmoplantar warts, 57.17% of verruca vulgaris and 30% of genital warts. However, 17.64% of palmoplantar wart and 14.91% of verruca vulgaris did not show any response. The common adverse effects observed were Chelitis (78.70%) followed by xerosis (36.57%), hair loss (3.70%) and hypertriglyceridemia (3.24%).

[*J Indian Med Assoc* 2018; 116: 16-9]

Key words **: Viral wart, isotretinoin.**

Warts are benign epithelial proliferation of the skin and mucous membrane resulting from infection with human papilloma virus.

Cutaneous warts spread either by direct contact from person to person or indirectly by contact with contaminated surfaces or objects, transmission being facilitated by minor breaks in the epidermal barrier.

Prevalence varies across different populations and age ranges, but is highest in children and adolescents at an estimated 3-5%[1]. The natural progression of warts indicates approximately 23% of warts regress spontaneously within 2 months, 30% within 3months and 65% to 78% within 2 years[2]. Warts typically continue to increase in size and distribution and may become more resistant to treatment over time[3]. Individuals with treatment-resistant warts potentially may be reservoirs for HPV transmission. In addition, warts can be painful depending on their location (eg, soles of the feet and near the nails).

Of the various therapeutic options available treatment depends on factors as the location, size and type of wart as well as the patient's wishes. The various treatment modalities include destructive methods like topical salicylic acid, trichloroacetic acid and canthiridins or wart removal by surgical excision, laser ablation or electrocautery. Various immune modulators and antivirals used are Interferon alfa, Imiquimod, DCP and DNCB, Cidofovir, Antisense oligo nucleotides. The chemotherapeutic modalities include Bleomycin, 5-Fluorouracil, Podophyllin, Podophyllotoxin. Other modalities used with variable outcomes include topical tretinoin, Oral Isotretinoin, Glutaraldehyde, Formaldehyde soaks and cimetidine available to practitioners faced with patients presenting with problematic warts.

Isotretinoin is a first generation retinoid and structurally it is 13-cis retinoic acid. Though used primarily for treatment of acne vulgaris it can be used in the treatment of viral warts as it can debulk warts by inhibiting the epidermal growth and differentiation[4] they are also potent immune modulators[5] and can down regulate HPV transcription in effected cells.

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Aims and Objectives

The aim of the study was to evaluate therapeutic efficacy of oral Isotretinoin in different types of warts and also to study clinical profiles of patients with viral warts and various adverse effects oral Isotretinoin.

Materials and Methods

Our study was a cross-sectional study based at a tertiary care Centre conducted between October 2015 to October 2017.

Inclusion criteria — All patients reporting to OPD with lesions clinically suggestive of warts were included.

Woman in the reproductive age group who had at least two negative urine or serum pregnancy tests and using two methods of contraception including at least one primary methods (tubal ligation, partner's vasectomy, intrauterine devices, birth control pills, and injectable/implantable/insertable hormonal birth control products) at least one month prior to Isotretinoin therapy and one month after discontinuation of therapy were included in the study.

Exclusion criteria — Patients with Abnormal biochemical profiles, pregnant woman and those taken any topical or systemic treatment within 3 months of enrolment were excluded from the study.

Special instruction —

(I) Women in the reproductive age groups were counselled not to conceive during the period of one month before therapy and one month after completion of therapy.

(II) All the patients enrolled into the study were advised to apply white petrolatum jelly (Vaseline) over the lips to avoid lip dryness.

Methods — A detailed history was elicited from patients selected for the study regarding

(I) Demographic details

(II) Duration of lesion

(III) Symptoms if any

(IV) H/O contact in anogenital warts

(V) Previous treatment if any

Detailed general, physical and systemic examinations were conducted.

Dermatological examination — It includes

(I) Location of lesion whether on skin or genitalia noted.

(II) No of lesions, distribution and types of warts were noted both before and after treatment.

(III) Serial digital photographs were taken both before and during the course of treatment.

Laboratory investigation — This include

(1) Routine laboratory investigation —

(I) Complete Haemogram

(II) LFT

(III) RFT

(IV) Serum lipid profile

(V) Fasting blood sugar

(2) Biopsy of skin if required

(3) VDRL for syphilis and ELISA for HIV in genital warts

(4) Any specific investigation, if required

Laboratory investigations were performed before treatment and every four weeks during the treatment period.

The patients were administered 0.5 mg/kg/day of isotretinoin for three months. The response to therapy was either any of the following. Complete response - when there was complete disappearance of warts.

Partial response - when there was more than 50% reduction in the no of warts.

No response - when there was no or partial improvements.

Observation

During the study period, out of 64,347 patients coming to the OPD, 592 were clinically diagnosed as wart with a prevalence of 0.92% (Table 1&2).

In the present study, most of the patients had Verrucae vulgaris 114(52.77%) followed by Palmo-plantar wart 51(23.61%), followed by Verrucae plana 31(14.35%) and Genital wart 20(9.25%). In our study, majority of patients were male 143(66.2%), with male to female ratio 1.95. Most of the patients were in the age group 21-30 years. Mean and median age were found to be 27.89±10.03 years and 24.5 years. Out of patients,72.68% patients were from rural area and 27.32% patients from urban area. Majority of patients belonged to lower socio-economic status 77(35.64%) patients had upper lower 55(25.46%) status and 35(16.20%) had lower middle status. Majority of patients were found to be 79(36.57%) illiterate, 51(23.61%) patients studied up to primary level while 47(21.75%) patients had studied up to secondary level. Majority of patients were farmers 88 (40.74%) followed by un employed 46(21.24%) followed by office workers 42(19.44%) and housewives 33(15.27%) (Table 3).

Table 1 — *Demographic details*

Characteristic	Number	Percentage
Gender :		
Male	143	66.2
Female	73	33.8
Age Distribution (in years) :		
0-10	0	0
11-20	52	24.07
21-30	83	38.43
31-40	51	23.62
41-50	18	8.33
51-60	9	4.16
>61	3	1.38
Residence :		
Rural	157	72.68
Urban	59	27.32
Socioeconomic status :		
Upper	25	11.57
Upper-middle	24	11.11
Lower-middle	35	16.20
Upper-lower	55	25.46
Lower	77	35.64
Occupation :		
Farmer	88	40.74
Office Worker	42	19.44
Housewife	32	14.81
Unemployed	54	25.00
Educational status :		
Illiterate	79	36.57
Primary	51	23.61
Secondary	47	21.75
Graduate and above	39	18.05

Table 2—*Details of Clinical Types of Warts*

Clinical Types of Warts	No of Cases	Percentage
Verrucae Plana	31	14.35
Verrucae Vulgaris	114	52.77
Palmo-Plantar Wart	51	23.61
Genital Wart	20	9.25

Most of the patients had lesions over upper extremities 63(29.16%) followed by lesions over lower extremities 57(26.38%) and face 22(10.18%) (Table 4).

In the present study majority of the patients had disease onset of >6 months comprising of 81 patients (37.50%) (Table 5).

Majority of patients 106(49.07%) had average no. Of lesions 10-30 followed by <10 lesions in 77 (35.64%) patients and >30 lesions in

Table 3 — *Distribution of Warts*

Sites	No of Cases	Percentage
Face	22	10.18
Upper extremities	81	37.5
Lower extremities	69	31.94
Trunk	5	2.31
Genitalia	20	9.25
Generalized	19	8.79

Table 4 — *Duration of Lesion*

Duration of Lesion	No of Cases	Percentage
<1 month	7	3.24
1-3 month	50	23.14
3-6months	78	36.11
>6months	81	37.5

Table 5 — *Average no of Lesions*

No of Lesions	No of Cases	Percentage
<10	106	49.07
10-30	77	33.64
>30	33	15.27

33(15.27%) patients. In the present study, 43(19.90%) patients had family contact history of wart.

Out of 216 patients immune-suppression was present in 19(8.79%) cases (Table 6&7).

Out of 216 patients treated with isotretinoin, Chelitis was the most common side effect seen in 170(78.70%) patients.

Table 7 — *Adverse Effects*

Adverse Effects	No of Cases	Percentage
Chelitis	170	78.70
Xerosis	79	36.57
Hairloss	8	3.70
Epistaxis	2	0.92
Hypertriglyceridemia	7	3.24
Hypertransaminases	3	1.38
None	13	6.01

Discussion

The prevalence of viral wart in our study was found to be 0.92% however Larsson and Liden and Beliavea TL *et al* have found it to be 20.1% and 12.9% respectively[6,7]. This wide variation in prevalence may be probably due to variation between samples and populations,variation in study design and age related effects.

In our study mean and median age were calculated to be 27.89 ±10.03 years. and 24.5 years respectively which is comparable to the findings of study done by Gonul M *et al* where the mean age was found to be 24.7±13.5[8]. In our study out of 216 patients maximum no of patients 83(38.24%) belonged to third decade while 52(24.07%) belonged to second decade and 51(23.61%) patients belonged to fourth decade while in the study by Ghadgepatil SS et al 32 % belonged to second decade and 30%patients belonged to third decade[9]. Similarly in the study of Bilgili ME *et al* the incidence of viral wart was found to be 32.52% and 20.8% in the second and third decade respectively[10].

Most of the studies by various workers have reported a definite male preponderance which was in accordance with our study so far as gender distribution was concerned.

In our study out of 216 cases verrucae vulgaris was present in 114(52.77%) patients followed by palmo-plantar wart 51(23.61%) cases and verrucae plana 31(14.77%) cases and conyloma acuminata 20(9.25%) cases which is comparable to the findings of study by Ghadgepatil SS *et al* where cutaneous warts comprised of verrucae vulgaris (42%), palmo-plantar wart (20%), verrucae plana (18%), mosaic wart (6%), and filiform/digitate wart (4%) type and condyloma accuminata was present in 10% of cases[9]. Similar results were found in the study by Baysal *et al*[11] However in the study by Gönül1 M *et al* the most frequent type was verrucae vulgaris (77.6%) followed by ano-genital wart (23.7%), plantar (18.8%), verrucae plana (6.9%), filiform (4.7%) which may be due to the pattern of sexual life in that country[8]. Out of 216 cases in 81 patients warts were present on upper extremities followed by 69 patients on lower extremities followed by 22 cases over face and 19 cases involving more than one site.Trunk was the least common site involved only in 5 cases. The findings are comparable to findings of the study done by Theng TSC *et al* where hands were involved in 39.1% cases and feet were involved in 38.4% cases followed by face involved in 23% of cases while trunk was involved in only 3.3% of cases[12] while in the study by Al-Mutairi N *et al* hands were the most common sites (40.19%) followed by feet (37.59%)[13]. Similarly in the study done by Ghadgepatil SS *et al* extremities (66.7%) were most favored sites of warts followed by the face (23%)[9]. Frequent involvement of extremities in warts is due to their increased exposure to trauma. Involvement of face is probably attributable to the increased cosmetic procedures like waxing, threading, facials etc. The trunk is the least common site involved as it is less exposed and less prone to trauma involved only in 5(2.31%) cases comparable to findings of Ghadgepatil SS *et al* (3%)[9] and Theng TSC *et al*(3.3%) cases[12]. In our study out of 216 patients 88 (40.74%)cases were farmers followed by unemployed 54(25%)cases followed by office workers 42(19.44%) cases and housewives in 32(14.81%)cases while in the study by Ghadgepatil SS *et al* 32% cases were students, 28% cases were labourer, 16% cases were housewives and 14 % cases were office workers[9]. In our study higher cases of warts in farmers may be due to lower level of literacy and high amount of physical activities in them.

In our study out of 216 patients a positive family history was present in 43 patients which was comparable to study of Theng TSC *et al* (30%)[12] and Al-mutairi and Alkhlaf (19.8%)[13].

In our study the mean duration of lesion before treatment was 6.25±4.39 month. The mean no. of lesions per patient was 9.2±3.9 comparable to findings of Al-Mutairi N *et al* (5.6)[13] and Theng TSC *et al* (7.03±8.08)[12].

In our study out of 216 patients 31(14.35) cases were verrucae plana. On treatment with oral Isotretinoin 0.5 mg/kg/day for 3 months 27(87.09%) patients showed complete clearance of warts and 3(9.67%) patients showed partial clearance while 1(3.24%) patient showed no response. The results are comparable to finding of the study by Al-Hamamy HR *et al* in which 73.07% patients showed complete clearance while 7.92% patients showed partial clearance of plane warts present on face[14]. In the study conducted by Olguin Garcia MG *et al* 100% patients showed complete clearance of recalcitrant plane warts present over face[15].

Table 6 — *Response to Treatment*

	Complete Response No of cases (%)	Partial Response No of cases (%)	No Response No of cases (%)
Verruca plana	27(87.09)	3(9.67)	1(3.24)
Verrucae Vulgaris	64(56.17)	33(28.94)	17(14.91)
Genital Wart	6(30)	9(45)	5(25)
Palmo-Plantar Wart	31(60.78)	11(21.56)	9(17.64)

In our study out of 216 patients 20(9.25%) had condyloma acuminata. After 3 months of treatment with oral Isotretinoin at the dose of 0.5mg/kg/day for 3 months 6(30%) patients showed complete clearance, 9 (45%) patients showed partial clearance while 5(25%) patients showed no response to therapy. The results were comparable to the findings of a double-blind placebo controlled clinical trial conducted by Georgala S *et al* in which 32.1% cases responded completely to treatment, 39.1% showed partial response while 28.5% showed no response[16]. In another study Tsambaos D *et al* treated 56 male patients with recalcitrant genital warts using Isotretinoin 1 mg/kg for 3 months. Of these, 39.6% responded completely and 13.2% responded partially[17].

In a study by Olsen EA *et al* patients with condyloma acuminata showed no response to therapy with Isotretinoin 1mg/kg /day for 6 weeks which may probably be due to a shorter duration of therapy used in the study[18]. In our study out of 216 patients 114 patients had verrucae vulgaris. On treatment with oral Isotretinoin 64(56.14%) patients showed complete response 33(28.94%) patients showed partial response while 17(14.91%) patients did not show any response to therapy. The lesions on the upper extremities were more responsive in comparison to the lesions over the lower extremities.

Viral warts are very common entities in dermatological practices. The response to therapy in different patients depends on their immunity status as well as number, size of the lesions and duration of the disease. However there is no definite therapy in the literature which is 100% effective in the treatment of warts. Hence newer modalities of treatment like oral Isotretinoin which would be efficient in the treatment of warts with minimal side-effects as well as cost-effective should be tried out.

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Observational Study

Intracerebral changes detected by CT scan of brain in eclampsia

Shamim Khandaker[1], Madhusudan Haldar[2], Samarendra Kumar Basu[3]

To evaluate the different neurological changes in brain in eclampsia by CT scan in relation to neurologic symptoms. This is prospective observational study in a tertiary hospital. CT scan of brain is performed within 48 hours of eclampsia after confinement of fetus and after stabilising the mother with standard $MgSO_4$ protocol. The CT scans of brain are performed with 5mm and 10mm section in the axial plain. CT scan of brain shows, 31.6% has cerebral edema, 23.7% have cerebral infract, 7.9% have cerebral haemorrhage, while 36.8% have no detectable findings. Parietal region of the brain is affected in 67% followed by parieto-occipital area (17%), occipital area (8%) and brain stem (8%). 68.4% mothers have headache, 18.4% have visual disturbances, 34.2% have altered sensorium with hyper-reflexia and 36.6% have coma. CT scan of brain in eclampsia can provide useful intracerebral information and should be done in cases with severe neurologic manifestations, if possible for every eclamptic mother.

[*J Indian Med Assoc* 2018; **116:** 20-3]

Key words **: Computed tomography, eclampsia.**

Eclampsia is defined as occurrence of generalised seizures, not caused by any co-incidental neurological disorder (eg, epilepsy) in a woman whose condition also meets the criteria for preeclampsia[1] which is a complex multi-organ disorder characterised by pregnancy induced hypertension and proteinuria after 20 weeks of pregnancy (exception –gestational trophoblastic disease or multiple pregnancy).

Cerebral complications are the major cause of deaths in eclampsia; still the neuropathophysiology of eclamptic seizure is mostly unknown. There are two distinct but related types of cerebral pathology in the patients of eclampsia[1]. The first is gross haemorrhage due to ruptured arteries caused by severe hypertension of any cause, not necessarily only by preeclampsia or eclampsia. The second type of post-mortem lesions are edema, hyperaemia, ischemic microinfarcts and petechial haemorrhages. The neurologic manifestations of severe eclampsia are identical to those of hypertensive encephalopathy[2], which is clinically manifested as generalised tonic-clonic seizure and usually preceded by neurological symptoms like hyper-reflexia, altered sensorium, headache, visual changes and even coma.

The recent advances in radiologic imaging including the use of computed tomography (CT) scans and magnetic resonance imaging (MRI), have greatly enhanced our understanding about the correlation between neurologic manifestations and neuro-anatomic and pathological characteristics of eclampsia[3]. Harandou M *et al*[4]; showed that 73.68% cases of eclamptic mothers who are still symptomatic after 24 hours have cerebral edema and 10.5% have cerebral hemorrhage and 15.7% have normal CT scan study.

The aim of the study is to evaluate the different neurological changes in brain by CT scan in eclampsia and their relation with different neurologic symptoms. In this study, CT scan methodology has been adopted because it is less expensive and easily available.

Methodology :

This is a prospective study of CT scan finding of brain on cases of eclampsia admitted in a tertiary hospital. The study population are chosen by random samplings who are patient of eclampsia admitted through emergency and also indoor patients who develop eclampsia after admission. The study protocol is approved by institutional ethics committee.

Inclusion Criteria :

(1) Patients with Eclampsia (at least one episode of seizure in women with more than 20 weeks gestation or less than 06 weeks postpartum with blood pressure more than 140 mm of Hg systolic and 90 mm of Hg diastolic with urine albumin of more than 0.3gm/L). both antepartum and postpartum

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Exclusion Criteria :

(1) Women who are known case of Hypertension, Epilepsy.

(2) Seizures due to metabolic disturbances, space occupying lesions or intracerebral infections.

Total 38 eclamptic mothers are chosen according to inclusion criteria. Basic information including age, parity and gestational age, previous medical or obstetric history is taken. Detailed history of convulsion like duration, time, number of convulsion and presence of premonitory symptoms are sought; followed by detailed neurological examination (specially level of consciousness, pupilary reaction and reflexes) including fundoscopy is performed. Basic investigations like blood pressure, urine for proteinuria (by dipstick) are measured and complete hemogram, platelet count, serum uric acid, serum creatinine, liver enzymes are sent. Standard $MgSO_4$ protocol is given to all eclamptic mothers.

If the mother is not already delivered, assessment of cervix and delivery of the fetus is done accordingly either by induction of labour or Caesarean section. CT scan of brain is performed within 48 hours of eclampsia after confinement of fetus and after stabilising the mother. The CT scans of brain are performed with plain and intravenous (non-ionic) contrast enhancement (if necessary) with 5mm and 10mm section in the axial plain. The CT scan findings are evaluated with neurological characteristics. Level of consciousness is classified according to Glasgow coma scale (<8 severe, 9-12 moderate and >13 minor)[5]. Statistical analysis is performed with aid of Statistical Package for the Social Sciences (SPSS 16, SPSS Inc., Chicago, IL, USA). P value <0.05 is considered for statistical significance. Follow-up CT scan is not performed as it is not included in the study protocol.

Results :

Total 38 eclamptic mothers are included in this study. Median age of the mothers is 23 years with standard deviation (SD) of 3.8years. In 47.4% eclamptic mothers are primigravida and 52.6% eclamptic mothers are multigravida. Among them 28.9% have postpartum eclampsia, 39.8% have intrapartum eclampsia and 31.6% have antepartum eclampsia. 39.47% mothers delivered by normal delivery and 60.53% mothers have undergone LSCS.

CT scan of brain shows, 31.6% have cerebral edema (diffuse white matter low density areas, patchy area of low density, loss of normal cortical sulci) 23.7% have cerebral infract (hypo attenuating brain tissue), 7.9% have cerebral haemorrhage (intraventricular/parenchymal hemorrhage, subarachnoid hemorrhage, subdural hematoma), while 36.8% have no detectable findings. Parietal region of the brain is affected in 67% followed by parieto-occipital area (17%), occipital area (8%) and brain stem (8%) (Table 1).

Among different neurologic symptoms 68.4% mothers have headache, 18.4% have visual disturbances, 34.2% have altered sensorium with hyper-reflexia and 36.6% have coma (Table 2). Eclamptic mother who presented with visual disturbances (7/38) mostly have brain lesions in parieto-occipital and occipital region (6/7), which is statistically significant (p<0.005). Similarly, mothers presented with coma (14/38) mostly have lesions in parietal cortex (10/14) also, significant (p 0.002). But no association is found with area of lesions and other symptoms like headache. Hyperreflexia indicates pyramidal syndrome involving CNS but has no correlation with type of lesions.

In 53.3% eclamptic mothers are preterm (<37 weeks completed gestational age); among them 42.9% have cerebral edema, 28.6% have cerebral infarction, 14.3% have cerebral haemorrhage and 14.3% have no CT scan findings. 44.7% eclamptic mothers are term (>37 weeks completed gestational age); among them 17.6% have cerebral edema, 17.6% have cerebral infarction, but 67.4% have no CT scan findings (p<0.05).

In this study there is no difference between blood pressure distributions between those who have CT scan findings than those who have not positive CT scan findings (Table 3).

Eclamptic mother whose number of episode of convulsion is less than 5; among them 61.9% have no finding in CT scan, 28.6% cerebral edema, 9.5% have cerebral infarction. On the other hand whose number of episode of convulsion is more than 5, among them 35.3% develop cerebral edema, 41.2% develop infarction and 17.6% develop cerebral haemorrhage (P 0.001).

Table 1 — *Different areas of brain involvement by CT scan*

	Cerebral edema	Cerebral haemorrhage	Cerebral infract	Total
Basal ganglia and internal capsule	4.1%	0%	4.1%	8.2%
Cerebral cortex: occipital	8.3%	0%	0%	8.3%
Cerebral cortex: parietal	37.5%	8.3%	20.8%	66.6%
Cerebral cortex: both parieto-occipital	0%	4.1%	12.5%	16.6%

Table 2 — *CT scan findings among different neurologic symptoms*

	CT Scan of brain			
Neurologic symptoms	Normal CT findings	Cerebral edema	Cerebral infarction	Cerebral haemorrhage
Altered sensorium and hyper-reflexia	38.5%	46.2%	15.4%	0%
Headache	26.9%	30.8%	30.8%	11.5%
Visual disturbances	14.3%	28.6%	42.9%	14.3%
Coma	7.1%	35.7%	35.7%	21.4%

Table 3 — *BP distribution among eclamptic mothers*

	CT scan features (edema/ hemorrhage/infarction)	No CT scan finding	P value
Systolic BP (mean±SD)	166.25±17.64mmHg	155.71±17.85mmHg	0.086
Diastolic BP (mean±SD)	113.33±14.09mmHg	107.14±9.94mmHg	0.156

In 55.3% eclamptic mothers have Glasgow coma scale <8 during admission; among them 33.3% develop cerebral edema, 33.3% develop infarction, 14.3% develop cerebral haemorrhage and 19% have no CT scan findings. 44.7% eclamptic mother whose Glasgow coma scale is >8; among them 29.4% develop cerebral edema, 11.8% develop infarct and 58.8% have no CT scan finding (p <0.05).

Of the eclamptic mothers who recovered within 24 hours to fully oriented state (N=13) 76.9% have no CT scan findings, only 15.4% develop cerebral edema and 7.7% develop infarction. Eclamptic mother who recovered over 48 hours (N=13); only 7.7% have no CT scan finding in CT scan, 46.2% develop edema, 30.8% develop infarction and 15.4% develop hemorrhage (p<0.019).

Discussion :

In this study cerebral edema is most common lesion (31.6%) detected by CT scan, but most importantly 37.8% eclamptic mothers have no CT scan finding. These finding is corroborative with the findings of Harandou M *et al*4 and Akan H *et al*[21] (Table 4).

In patients with a normal CT scan, MRI is indicated but has not been made because of cost and non-availability in our institute. 50% of the Posterior reversible encephalopathy syndrome (PRES) patients (revealed by MRI) show normal initial CT scans. MRI investigation would have revealed more brain lesions.

Regarding area of distribution parietal and occipital area is the most frequent site of brain lesions in CT scan; supported by observation of Naidu *et al*[6]. They found parieto-occipital involvement in 97.4% of cases. Sometimes diffuse brain edema is associated with compression or dilatation of 3rd and 4th ventricles. There are two such cases in our study. One rare case of lacunar infarct and another rare subarachnoid haemorrhage is found in this study.

The CT scan findings observed in this study is similar to that observed in patients have severe hypertensive encephalopathy[7] or more similar to its variant Posterior reversible encephalopathy syndrome (PRES)[8]. PRES is characterized by headache, altered mental status, visual disturbances, and seizures. Although hypertensive encephalopathy can arise in patients with conditions in which there is acute systemic hypertension alone, it most commonly occurs in patients also having pre-existing endothelial dysfunction or damage. The combination of acute hypertension and endothelial damage results in hydrostatic edema (hyperperfusion) – a specific form of vasogenic edema characterised by the forced leakage of serum through capillary walls and into the brain interstitium- which, if severe enough, will be radio-graphically evident[8,9]. Vasogenic edema is most common finding in eclampsia which explain the reversible nature of most eclampsia. The patients which show no significant finding in CT scan may have very mild vasogenic edema not enough for radiologic detection. The CT scan findings of cerebral infarction are originating from anoxia and cytotoxic edema. This may represents the spectrum of eclampsia ranges from an initially reversible phase of vasogenic edema formation to a later phase of ischemic damage and hemorrhage, which carries a worse prognosis with residual neurologic effect[10]. In fact, laboratory studies of hypertensive encephalopathy, suggest that as vasogenic edema progresses, local tissue pressure increases. This causes a decrease in regional perfusion pressure and a reduction of blood flow to ischemic levels. Subsequently, areas surrounding marked vasogenic edema may progress to infarction and cytotoxic edema[10].

Table 4 — *CT scan findings of brain in eclampsiadifferent study*

	Normal finding	Edema	Infarction/ Thrombosis	Haemo-rrhage
Harandou *et al*[4] (2006)	15.78%	73.68%	15.78%	10.53%
Akan H *et al*[21] (1993)	18.18%	50%	13.63%	9.09%
Milliez J (1990)	59%	34%		6.8%
Richards AM[15] (1988)		63.79%		9.3%
Naidu K[6] (1997)		58.5%		

Brain perfusion is maintained by an auto regulatory system of small arteries and arterioles that has myogenic and neurogenic component[9]. In PRES cases direct toxic effect on endothelium or vessel distension decrease the effect of myogenic mechanism. Then neurogenic mechanisms take over regulation of cerebral perfusion. The perivascular sympathetic nerves travel in the adventitial layer of cerebral blood vessels and are relatively protected from agents that cause endothelial damage. Since the vertebra-basilar system and posterior cerebral arteries are sparsely innervated by sympathetic nerves[11]; the occipital lobe and other posterior brain regions may be particularly susceptible to breakthrough of auto-regulation with elevated systemic pressure. Vasoconstriction induced by sympathetic innervations, moderately protects anterior circulation areas from over perfusion.

Headache is most common neurologic symptoms in this study (68.4%). Akutsu T *et al* (1992)[12] and Chang WN *et al* (1996)[13] also get similar results. Eclamptic mothers with visual symptoms and coma have more lesions in parieto-occipital region and parietal region respectively is corroborative with the findings of Chakravarty A, Chakrabarty SD (2002)[14] and Chang WN *et al* (1996)[13]. Mothers who have develop coma with Glasgow coma scale <8 and with recurrent episode of convulsion (>5 times in number) develop more findings in CT scan. This finding is correlated to study of Richards *et al*[15] showing severity of edema is related to duration of intermittent seizures. Also, mothers who become fully oriented within 24 hours have significantly less chance of having brain lesions in CT scan. As cerebral mass effect along with diffuse white matter hypodensities is associated significantly more with coma (p 0.034); these mothers recovered later from their eclamptic episodes16. In this study preterm eclamptic mother are significantly having pronounced CT scan finding than term mother (p<0.05); as preterm mothers are more severely affected in respect to more prodromal symptoms, multiple seizures, major maternal complication[17]. In our study, there is no statistical significant difference in blood pressure values between cases of positive CT scan findings and cases with normal CT scan findings. Acute increase in blood pressure in the later half of pregnancy from the mid pregnancy blood pressure nadir called 'Delta Hypertension' may signify preeclampsia even if absolute pressure may still be <140/90 mmHg. Some of these patients may develop eclamptic seizure whose blood pressure have stayed below 140/90 mmHg[18]. Brain edema detected in preeclampsia/eclampsia is thought to be secondary to endothelial injury, rather than hyperperfusion (acute hypertension) alone. This is also the reason of seizure occasionally found in normotensive eclampsia, where cerebral autoregulation is disrupted due to endothelial factor resulting in vasogenic edema. This finding is correlated with the findings of Schwartz *et al*[19].

Conclusion :

It is evident from this study that cerebral edema is most common cerebral lesions followed by infarction and hemorrhage and parieto-occipital regions of brain is the most common affected area. Although almost 38% eclamptic mother s do not have cerebral lesions, those who have lesions are significantly related to level of consciousness, number of convulsive episode and time taken to recover fully oriented state. Most common neurological finding is headache followed by altered sensorium and hyperreflexia, visual disturbances and coma.

CT scan of brain can provide useful intracerebral information to detect different brain lesions in eclampsia which may have different prognosis with residual effect and may need specific modification in management protocol to prevent long term neurologic sequels and reduce maternal mortality and morbidity; although these parameters are not included in this study. Hira B and Moodley J (2004) have shown that CT scan does change management in 27% of eclamptic mothers which is statistically significant[20].

Conflict of interest: None

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Observational Study

Impact of tuberculosis in pregnancy

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Women are more prone to develop tuberculosis during pregnancy and in the post-partum period due to the biological changes that influence the tuberculosis epidemiology. Government Hospital for Women and Children, Institute for Obstetrics and Gynecology (IOG), Chennai, India. To find out the impact of tuberculosis in pregnancy. The data from case sheets of pregnant women admitted for obstetric care from January 1, 2015 through December 31, 2015 in, Government Hospital for women and children, Institute for Obstetrics and Gynecology (IOG) were scrutinised. The data from case records of pregnant women with past history and/or present history of tuberculosis and admitted for obstetric care were selected and these constituted the study group. The data of Pregnant women who had delivered or had been admitted on the same dates, formed the comparison group. The incidence of TB in pregnancy in this hospital, for the year 2015 was 0.36%. The symptom of breathlessness, was present in a significant number of women (p value 0.004). Complaints of fever and cough, commonly associated with tuberculosis was also present in a large number of women. The BMI range was lower in pregnant women with TB. Skeletal deformities and Pregnancy induced Hypertension were more often observed in women with TB in pregnancy, and TB in pregnancy was more often seen in primis (58%). The majority of women were aged below 25 years. Relapse of TB was seen in 18.2% of pregnant women. COPD/ Bronchial complaints, and the complication of Premature rupture of membranes was significant. The complication of placenta previa, and more important to note, among primigravid women was highly significant and present in 3.6% of women. Abortion rates were significantly high (p value 0.047). Term deliveries were less. More babies had low birth weight, and Lower APGAR scores which were below 6. Perinatal mortality was 9% . Still births were high [p value 0.057]. Hospital stay was longer in women with TB, for both periods from admission to discharge from hospital and from delivery of baby to discharge from hospital (p value 0.027 and 0.002). Health services should definitely include measures for TB prevention, diagnosis and treatment in all antenatal and postnatal clinics. [*J Indian Med Assoc* 2018; **116**: 26-31]

Key words **: Tuberculosis, Pregnancy, morbidity.**

In 2015, the World Health Organization (WHO) estimated that there were around 10.4 million new Tuberculosis (TB) cases worldwide, of which 3.5 million were women[1].

In women, the risk of TB increases during pregnancy[2,3,4] and is also associated with higher rates of maternal and perinatal morbidity and mortality[2-7]. For a pregnant woman, infected with Human immunodeficiency virus (HIV), and with active TB, the risk of maternal mortality increases by nearly 300%, when compared to that of an HIV negative pregnant woman[8]. Maternal TB is associated with poor outcome of the baby such as small for gestational age and low birth weight[8,9].

Without treatment both pulmonary and extrapulmonary tuberculosis, lead to poor obstetric and perinatal outcomes[9,10].

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Tuberculosis in Pregnancy :

Women are more prone to develop tuberculosis during pregnancy and in the post partum period,due to the biological changes that influence the tuberculosis epidemiology.

In preparation to receive and nurture the foetal allograft. Pregnancy suppresses the T-helper 1 proinflammatory response. This may mask symptoms while, increasing susceptibility to new infection and reactivation of tuberculosis. After delivery, T- helper suppression reverses, and symptoms of tuberculosis are exacerbated. A large study recently found that early postpartum women are twice as likely to develop tuberculosis as nonpregnant women[11-13].

In pregnant women, tuberculosis is often undiagnosed until late in the disease process[7]. Women usually appear healthy and do not present with typical symptoms of tuberculosis. Clinical diagnosis of tuberculosis is difficult especially among pregnant women, as the symptoms are initially ascribed to pregnancy. Constitutional symptoms like lethargy, night sweats, loss of appetite, tiredness, fatigue are non - specific symptoms, related to the physiological response to pregnancy. HIV co-infection also contributes to masking of symptoms and atypical presentations[8]. Further extra pulmonary tuberculosis appears to be on the rise recently. Cases of TB involvement of breast, spine, peritoneum, kidneys, pelvis and meninges were reported in women during pregnancy and puerperium[12-17].

TB in pregnancy can be missed easily and remain undiagnosed and unreported due to lack of clinical awareness and diagnostic tests. The effect of TB on pregnancy may be influenced by many factors namely, the severity of the disease, the gestational age of pregnancy, at the time of diagnosis, the presence of extra pulmonary spread, HIV coinfection and delay in instituting anti-tubercular treatment.

The WHO estimated that every year, one million TB cases are missed in India[1].

Yet , if anti-tubercular treatment (ATT) is started early in pregnancy, the outcome is the same as that in non-pregnant patients !![1,1a,1b].

In 2011, the highest number of cases in pregnant women (44500 cases) was in India , and contributed to 20.6% of the global TB burden. The rate of TB disease in India was estimated to be 2.3 (1.6-3.1) per 1000 pregnant women[1,1a,1b]. Though there being a high burden of TB cases in India[1], there is a limited data available about the impact of TB in Pregnancy.

Thus, we sought to analyse the factors that affect the pregnancy outcomes among Pregnant women with TB using the available hospital records in the, Government Hospital for Women and Children, Institute for Obstetrics and Gynaecology (IOG), Chennai, India.

TB is known to reactivate during pregnancy and in early puerperium.v.So it was decided that to obtain relevant information of the effect of tuberculosis in pregnancy[5,17,18], the data from case records of pregnant women, admitted for obstetric care with past history of tuberculosis or history of tuberculosis diagnosed in the current pregnancy should be analysed .

The term tuberculosis in pregnancy refers to pregnant women with past history of tuberculosis or with history of tuberculosis diagnosed in the current pregnancy.

Background and Settings :

The metropolis, Chennai is the capital city of India's southernmost state Tamil Nadu, with a population of approximately 7.08 million people.

Government Hospital for women and children, Institute Of Obstetrics and Gynaecology is a large institution in Chennai, South India , with 1075 beds for in-patients . The institution is also the obstetrics and gynaecology department of Madras Medical College (MMC) and Rajiv Gandhi General Hospital (RGGH). An average of 1100 to 1300 deliveries are conducted every month and annually more than 15000 pregnant women are admitted here for confinement. It is a tertiary referral centre and pregnant women with severe high risk complications,from nearby urban and rural areas and neighbouring states, are referred here for treatment and also for management of labour. To provide appropriate care, for the pregnant woman, at labour, the hospital is equipped with a Labour Ward, Intensive Care Unit, Isolation Ward, and a High Dependency Unit, and a New born care ward with neonatal intensive care unit. Specialists, both physicians and surgeons from Madras Medical College RGGH, call over to the hospital , for examining the pregnant women with medical or surgical complications, and give expert advise regarding the management of these pregnant women. Chest and TB physicians from RGGH,, provide the expert management for diagnosis and treatment of pregnant women with tuberculosis .

Aim :

To find out the impact of tuberculosis in pregnancy.

Methods :

Study population : For this study case records of women admitted for obstetric care in Government Hospital for women and children, Egmore Chennai, a tertiary referral, public, teaching hospital in the year 2015 from January 1, 2015 through December 31, 2015, were selected [study population].

Approval for this study was obtained from the, institutional, Ethics committee. Clearance was granted for us to access the obstetric records from the medical records department, for the year 2015.

Study design : This was a retrospective analytical case control study (Observational), and was conducted in 2016 from the months from August to December. Selection of case records for comparison ,was in the ratio of 4:1. Four records of women without history of tuberculosis were selected for every one record of woman with tuberculosis in pregnancy. This was to reduce statistical errors and for obtaining relevant values for the tests of significance.

Statistical Analysis was done by using SPSS software.

Selection of case records: The data from case sheets of pregnant women admitted for obstetric care in, Government Hospital for women and children, Institute for Obstetrics and Gynaecology (IOG) were scrutinised. The data from case records of all pregnant women with past history or present history of tuberculosis and admitted for obstetric care were selected and constituted the study group

For comparison the case records of women who had delivered on the same dates, or who had been admitted on the same date were selected. Selection was done by computer generated randomised numbers .This formed the comparison group. The details regarding pregnancy status, parity, gestational age of pregnancy, past history of abortion were noted. For pregnant women with history of treatment for tuberculosis in the past, the details regarding

completion of ATT course and when the anti tubercular treatment (ATT) was taken, were noted (ie, the number of years prior to the current pregnancy). The age, BMI, and socio economic status of women were recorded.

The presenting complaints common to TB, namely Breathlessness, Cough, Fever, Night Sweats, Weight loss and blood in sputum were noted for all women.

Sample size : In the study period of one year, a total of Fifty five pregnant women who had tuberculosis in the past or diagnosed with tuberculosis, had been admitted for obstetric care. They constituted the study group. In the comparison group there were 224 women admitted for obstetric care in the same period. This was to find out the significance of presenting complaints, and for delivered women , the outcome of pregnancy and neonatal outcome of babies born to pregnant women with tuberculosis.

Results :

In the study period of one year 2015 there were 15093 deliveries conducted, at Government. Hospital for women and children, Institute Of Obstetrics and Gynecology.

In the year 2015, the hospital recorded a maternal mortality rate (MMR) of 142 (maternal deaths per lakh deliveries). The perinatal mortality rate (PMR) per thousand was 63.1.

In the study period of one year, from January 1, 2015 through December 31, 2015, a total of Fifty five pregnant women who had or diagnosed with tuberculosis, were admitted for obstetric care. Twelve women were on treatment for TB and taking anti tubercular treatment, in the current pregnancy. Forty four women gave history of tuberculosis in the past. In the comparative group there were 224 women, without tuberculosis,admitted for obstetric care in the same period (Table 1).

The age group of women ranged from 19 to 35 years in the group of women with TB and from 18 years to 38 years[12,18], in the comparison group. Significantly high numbers of women with TB in pregnancy were aged above twenty four years and below 34 years (p value 0.001)[17,20]. The BMI range was lower among pregnant women with TB in the study group and ranged from 16 to 39 as compared to women in the comparison group ,without TB, where BMI ranged between 18 to 44. The largest number of twenty women among the study group with TB had BMI rates ranging between 18.5 to 24.9. As the hospital is a public, hospital and no money is charged from patients the majority of women in both groups were below poverty line. Both groups were comparable in socio economic status.

Symptoms :

It was important to note that the most common complaint of Breathlessness was complained of by a significant number of women[12,14,16,22] in the study group [p value 0.004]. Among other symptoms, Cough was complained of by a large number of women with TB (p value 0.069). Fever was present in more women with TB (p value 0.044). Other Complaints of weight loss, blood in sputum, night sweat was not complained of by any woman in either group. Primiparous women formed a significant group of 59% of women with TB in pregnancy (Table 1).

Maternal Complications :

Extrapulmonary TB affected 45.5% of women (n= 25), and among women with TB in the current pregnancy extrapulmonary TB was present in 58.3% of women. TB of lymph nodes of neck was the commonest type among this group.

Pulmonary TB affected 54.5% of women (n= 30) and was diagnosed in 41.7% of women with TB in current pregnancy.

Skeletal deformity in women was only present in four women with past history of being treated for TB[13,17]. Hypertension induced by pregnancy was an associated complication in a significantly large number of women with tuberculosis (p value 0.08). Relapse of TB in pregnant women was significantly high and seen in 18.2% of pregnant women. It was significant to note that tuberculosis relapsed during pregnancy even though these women had completed the course of anti tubercular treatment[18].

Pregnancy complicated by placenta previa was significant and observed in 3.6% of women. It was more important to note,that ,both these women were primigravidas. COPD/ Bronchial complaints, and Premature rupture of membranes was a significant complaint in women with TB[21-23].

Delivery :

The mode of delivery, as vaginal, assisted or by caesarean section was comparable in both groups (Table 2). Abortion rates were significantly high in the study group of women (p value 0.047).

Hospital stay was longer in women with TB, for both periods from admission to discharge from hospital and from delivery of baby to discharge from hospital (p value 0.027 and 0.002).

Baby Outcome :

The study group of women, recorded 80% live births and the comparison group had 98% of babies , born alive . Among the babies born to women in the study group only 67% were delivered at term, and only 62.5% of babies weighed 2.5Kg or more. The comparative group had 83% of babies born at term and 72% of them had birthweight of 2.5kg or more[13,19]. At birth APGAR scores of seven and above was recorded in only72% of babies in the study group and in 95% of babies in the comparison group. Significant number of babies with Lower APGAR scores (below 6) were born to women in the study group (p value 0.37) . There were 5% of babies born dead in the study group and in the comparison group, it was 1%. The outcome of babies was similar to observations and studies done in other centres in the world[19-21]. Significantly more infant deaths was recorded in the study group (p value 0.057)(Table 3). Other features of baby complications such as birth asphyxia, IUGR, Respiratory Distress Syndrome, congenital anomalies and hypoglycemia were comparable in both groups[24-26]. At discharge only 77% of babies were alive in the study group ,although 95% of babies in the comparative group were discharged alive .

Table 1— *Baseline Character of Pregnant women with TB and Pregnant women without TB admitted in Institute of Obstetrics and Gynecology, Egmore, Chennai for delivery in year 2015*

Factor		Pregnancy without TB		Pregnancy with TB		OR (95%CI)		0.001
		n	%	n	%			
Age	15-24	120	88.9	15	11.1	1.00		
	25-34	101	71.6	40	28.4	3.17	(1.65 - 6.07)	0.001
	35-44	3	75.0	01	25.0	2.67	(0.26 - 27.3)	0.409
BMI	< 18.5	3	37.5	5	62.5	1.00		
	18.5 - 24.9	82	80.4	20	19.6	0.15	0.03-0.66	0.013
	25.0 - 29.9	68	81.9%	15	18.1%	0.13	0.03 - 0.62	0.010
	30.0 & above	42	80.8%	10	19.2%	0.14	0.03 - 0.7	0.010
Socio Economic Status								
below poverty line		221	98.7	54	96.4	1.00		
above poverty line		3	1.3	2	3.6	2.83	0.46 - 17.4	0.262
							0.56 - 4.79	0.372
Presenting Complaints								
Breathlessness		2	0.9	5	8.9	11.33	2.13 - 60.09	0.004
Cough		5	2.2	4	7.1	3.5	0.91 - 13.52	0.069
Fever		9	4	3	5.4	1.41	0.37 - 5.38	0.619
Night Sweat		0	0	0	0		NA	
Weight Loss		0	0	0	0		NA	
Blood in sputum		0	0	0	0		NA	
Maternal Complications								
Anemia		42	18.8	11	19.6	1.06	0.51 - 2.22	0.879
Hypothyroidism		12	5.4	6	10.7	2.12	0.76 - 5.92	0.152
Pregnancy induced HT		20	8.9	1	1.8	0.19	0.02 - 1.41	0.104
Pre-eclampsia		16	7.1	5	8.9	1.27	0.45 - 3.64	0.651
Gestational diabetes		12	5.4	2	3.6	0.65	0.14 - 3.01	0.586
Precious Baby		6	2.7	3	5.4	2.06	0.5 - 8.49	0.319
Previous LSCS		41	18.3	10	17.9	0.97	0.45 - 2.08	0.938
Oligo hydromnias		29	12.9	8	14.3	1.12	0.48 - 2.61	0.791
Poly hydromnias		2	0.9	2	3.6	4.11	0.57 - 29.85	0.162
TB relapse		0	0.0	9	16.1			
Placenta Previa		0	0.0	2	3.6			
COPD|BA| bronchiectasis		4	1.8	5	8.9	5.39	1.4 - 20.79	0.014
Skeletal deformity		0	0.0	4	7.1			
Premature rupture of membrane		43	19.2	5	8.9	0.41	0.16 - 1.1	0.076
Heart disease complications		5	2.2	1	1.8	0.8	0.09 - 6.96	0.837
Cervical incompetence		0	0.0	1	1.8			
Thalassemia		2	0.9	1	1.8	2.02	0.18 - 22.66	0.569
Disseminated intravascular coagulation		26	11.6	5	8.9	0.75	0.27 - 2.04	0.569
HBsAg		10	4.5	1	1.8	0.39	0.05 - 3.08	0.368
HIV		2	0.9	0	0.0			

Among pregnant women with Tuberculosis, the symptom of breathlessness was significant. The BMI range was lower. COPD/ Bronchial complaints, and complication of Premature rupture of membranes was significant.The complication of placenta previa , and more important to note ,among primigravid women was highly significant and present in 3.6% of women.

All HIV positive pregnant women are periodically screened for TB, according to the NACO guidelines, in this Institution. A total number of Forty seven, HIV positive women, delivered in this hospital during the study period. It was significant to note that no HIV positive mother was diagnosed with TB[28], both during pregnancy and in the post natal period, in the study period .

Maternal deaths due to TB.

In the study period there were no maternal deaths , wherein TB was the causative factor as either a direct or an indirect cause for maternal death.

Conclusion :

The incidence of TB in pregnancy was 0.36% ,in this study. On analysis of the symptoms and on following the course of pregnancy among women with tuberculosis (both in current pregnancy and history of disease in the past) we found the following . The symptom of breathlessness, was present in a significant number of women. Complaints of fever and cough, commonly associated with tuberculosis was also present in a large number of women. The BMI range was lower in pregnant women with TB. Skeletal deformities and Pregnancy induced Hypertension were more often observed in women with TB in pregnancy, and TB in pregnancy was more often seen in primis. The majority of women were aged below 25 years. Relapse of TB in pregnant women was significantly high and seen in 18.2% of pregnant women. COPD/ Bronchial complaints, and Premature rupture of membranes was significant in women with TB.

The complication of placenta previa, and more important to note, among primigravid women was highly significant and present in 3.6% of women with TB in pregnancy. Abortion rates were significantly higher (p value 0.04).

Table 2 — *Pregnancy status, delivery outcome and hospital stay among women with TB in Pregnancy and pregnant women without TB , admitted in Institute of Obstetrics and Gynecology, Egmore, Chennai in year 2015*

Factor	Pregnancy without TB (n=224)		Pregnancy with TB (n=56)		0R (95%CI)		P value
	n	%	n	%			
Pregnancy Status							
P0	119	53.10	33	58.9		1.00	
P1	87	38.80	19	33.9	0.79	(0.42 - 1.48)	0.456
P2	16	7.10	3	5.4	0.68	(0.19 - 2.46)	0.553
P3	1	0.40	1	1.8	3.61	(0.22 – 59.21)	0.369
P4	1	0.40	0	0		NA	
Type of delivery							
Vaginal	125	55.8	21	37.5	1.00		
Forceps	13	5.8	2	3.6	0.92	(0.19 - 4.35)	0.912
LSCS	84	37.5	22	39.3	1.56	(0.81 - 3.01)	0.187
Abortion	1	0.4	2	3.6	11.9	(1.03 - 137.21)	0.047
No delivery	0	0	7	12.5		NA	
Not available	1	0.4	2	3.6		NA	
No of abortion							
0	197	87.9	46	82.1	1		
1	20	8.9	9	16.1	1.93	(0.82 - 4.51)	0.13
2	7	3.1	1	1.8	0.61	(0.07 - 5.1)	0.65
Type of delivery							
Vaginal	125	55.8	21	37.5	1		
Forceps	13	5.8	2	3.6	0.92	(0.19 - 4.35)	0.912
LSCS	84	37.5	22	39.3	1.56	(0.81 - 3.01)	0.187
Abortion	1	0.4	2	3.6	11.9	(1.03 - 137.21)	0.047
No delivery	0	0	7	12.5			
Not available	1	0.4	2	3.6			
Time Taken for (in Days) * Duration in Hospital Stay							
Admission to Delivery	1	0-2	1	0-1	1.03	(0.91 - 1.17)	0.597
Delivery to Discharge	6	4 - 8	9	6 - 12	1.1	(1.04 - 1.17)	0.002
Admission to Discharge	7	5 - 10	9	6 - 13.5	1.06	(1.01 - 1.11)	0.027

Definition of abbreviations: CI = confidence interval; OR = Odds ratio
Values were presented as n (%) and Median (Interquartile)
*Mann-Whitney test was performed Boldface indicates statistically significant at a = 0.05.

The outcome of pregnancy among pregnant women with TB: Abortion rates were significant, Term deliveries were less. Further , Hospital stay was longer in women with TB, for both periods from admission to discharge from hospital and from delivery of baby to discharge from hospital

Among pregnant women with TB ,term deliveries were less .The mode of delivery was comparable. Hospital stay was significantly longer in women with TB, for both periods from admission to discharge from hospital and from delivery of baby to discharge from hospital and (p value 0.027 and 0.002).

Perinatal mortality was 9% . The number of Still births was high (p 0.057). More babies had low birth weight . Lower APGAR scores below 6 were significantly high[19].

A pregnant woman living in poverty, overcrowding, malnutrition, food insecurity, tobacco use, HIV, or diabetes has a higher risk for adverse outcome of pregnancy. Women with TB face social stigma and discrimination by their families and communities. TB among women affect their children and families also. Cultural and financial barriers affect health seeking behaviour of women and lead to delayed diagnosis and to further severity of the disease[3].

Poor nutritional status, anaemia, hypo-proteinemia and associated medical disorders contribute to maternal morbidity and mortality[9]. TB in pregnancy continues as a cause of concern for both mother and baby. A simple clinical algorithm has been provided by WHO for identifying women at risk or with disease and so that they could be screened for tuberculosis, and providing for early diagnosis and treatment.

It is also important to address the unmet and basic needs of children , pregnant and breastfeeding women which should be done by national policy makers and health services implementing bodies.

Health services should definitely include measures for TB prevention , diagnosis and treatment in the antenatal and postnatal clinics[29].

Acknowledgement :

The authors thank the Director, IOG for granting permission to conduct this study and present the data, and the medical students and postgraduates for their support in data entry. A special note of thanks to Dr DSA Karthickeyan MPH, from the Academy for Public Health (Recognized by WHO), and Dr Palanivel MD, for their support in conducting the study and assistance in statistical analysis.

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Table 3 — *Status of new-borns of TB Pregnancy Versus Pregnant women without TB admitted in Institute of Obstetrics and Gynecology, Egmore, Chennai in year 2015*

Factor	Pregnancy without TB (n=224)		Pregnancy with TB (n=56)		0R (95%CI)		P value
	n	%	n	%			
Baby Status							
Term	185	82.6	38	67.9	1.00		
Preterm	38	17	10	17.9	1.28	(0.59 - 2.79)	0.533
No delivery	0	0	2	3.6	NA		
Not available	1	0.4	6	10.7	NA		
Baby Weight							
<2.5kg	61	27.2	11	19.6	0.83	(0.4 - 1.74)	0.62
≥2.5kg	161	71.9	35	62.5	1.00		
Not available	2	0.9	10	17.9	NA		
Sex of the baby*							
Male	121	54	27	48.2	0.748		
Female	101	45.1	19	33.9			
Not available	2	0.9	10	17.9	NA		
APGAR Score							
Up to 6	5	2.2	4	7.1	4.24	(1.09 - 16.48)	0.037
7 to 10	212	94.6	40	71.4	1.00		
Not available	7	3.1	12	21.4	NA		
Status of birth							
Alive	220	98.2	45	80.4	1.00		
Death	3	1.3	3	5.4	4.89	(0.96 - 25.01)	0.057
Not available	1	0.4	8	14.3	NA		
Status of discharge							
Alive	213	95.1	43	76.8	1.00		
Death	10	4.5	5	8.9	2.48	(0.81 - 7.61)	0.113
Not available	1	0.4	8	14.3	NA		
Birth complications							
Birth asphyxia*	3	1.3	0	0			1.000
IUGR	14	6.3	3	5.4	1.08	(0.3 - 3.92)	0.911
Respiratory distress	17	7.6	3	5.4	0.9	(0.25 - 3.2)	0.865
Congenital anomalies	16	7.1	1	1.8	0.3	(0.04 - 2.35)	0.254
Hypoglycaemia	2	0.9	1	1.8	2.6	(0.23 - 29.28)	0.44
Number of days in NICU*	2	1- 5	3	1 - 8			0.232

Definition of abbreviations: CI = confidence interval; OR = Odds ratio;
NICU = Neonatal Intensive Care Unit
Values were presented as n (%) and Median (Interquartile)
*Fishers Exact test and Mann-Whitney test was performed
Boldface indicates statistically significant at a = 0.05.

Outcome of infants born to women with tuberculosis: The number of Still births was high. More babies had low birth weight . The numbers of infants with Lower APGAR scores below 6 were significantly high. At discharge only 77% of babies were alive in the study group ,and 95% of babies in the comparative group. Perinatal mortality was high [9%].

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Observational Study

The pattern of ocular trauma in Kolkata & surroundings — aetiology & epidemiology

Partha Pratim Mondal[1], Subroto Rakshit[2], Kakali Sen[3]

The purpose of the study was to determine the epidemiology, aetiology and pattern of penetrating ocular trauma in Kolkata and surroundings. It was a retrospective study of patients with open globe injuries who underwent surgery from July 2015 to January 2018 at KPC Medical College & Hospital, West Bengal & RIO, Kolkata. We examined and classified the injuries based on BETTS (Birmingham eye trauma terminology system). We included 192 eyes from 192 patients. The majority of injuries occurred in young (48% patients were <16 years). 54.17% patients were male and 45.83% were female. Most common mode of trauma was Stone (52), Followed by Iron Rod or Piece (44) and Wood (32). Other causes were Cow's horn (14), Needle (12) Knife (8), Arrow (6), Sickle (6), Rubber Tube (4), Glass (2), Crackers (4), Metal Instrument (2), Bird Beak (2) and Pencil (2). The highest proportion of injuries occurred at home followed by outside. According to BETTS, 61 patients had zone 1, 29 patients - zone 2, 6 patients - zone 3 injury. Associated features were iris prolapse, hyphaema, anterior capsular rupture, lid tear and impacted foreign body. Mean period of presenting at hospital was 2.72 days. Most common visual acuity at presentation was less than 6/60 to perception of light. In our study, serious ocular trauma frequently occurred at home followed by outside and the young were particularly at risk. Most common mode of trauma was stone. Most of the injuries were limited to cornea up to limbus. More adequate adult vision and educational measures are necessary in order to reduce the prevalence of these accidents.

[*J Indian Med Assoc* 2018; **116**: 32-5]

Key words **: Ocular Trauma, Epidemiology, Aetiology.**

Ocular injury remains an important cause of avoidable and predominantly, monocular visual impairment and blindness[1,2]. It is a preventable cause of blindness and yet it remains a significant disabling health problem that affects all age groups. Worldwide, there are approximately 6 million people blind from eye injuries[2,3], million bilaterally visually impaired and 19 million with unilateral visual loss; these facts make ocular trauma the most common cause of unilateral blindness[3]. The age distribution for the occurrences of serious ocular trauma is bimodal with the maximum incidence in young adults and a second peak in elderly[2,4]. Even though, ocular trauma has been described as a neglected issue[5], it was highlighted as a major cause of visual morbidity more recently.

According to estimates by WHO, about 55 million eye injuries restricting activities for more than one day occur each year, 7,50,000 cases requiring hospitalisation, which includes 2,00,000 open globe injuries[11]. Types of injuries vary from closed globe to an open globe injury. Worldwide the typical male-to-female ratio is 4:1[6-8] and open globe injury is said to be more common. Penetrating ocular injuries in particular carry high risk of visual morbidity in all age groups. In the Indian context, ocular injury as a cause of blindness constitutes 1.5% of total cases (NPCB 2002).

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According to Birmingham Eye Trauma Terminology or BETT, open globe injury can be classified into four types:

(1) Rupture. (2) Penetrating injury. (3) Intraocular foreign body.

(4) Perforating injury.

Ocular trauma classification group has classified open globe injury as follows[13].

Type	Grade (Visual Acuity)	Pupil	Zone
Rupture	> 20/40	RAPD Present	Up to limbus
Penetrating	20/50 – 20/100	RAPD absent	Limbus to 5 min posterior into sclera
Intraocular foreign body	19/100 – 5/200		More than 5 mm posterior into a sclera
Perforating	4/200-PL +ve		
Mixed	No PL		

Recognition of the public health importance of ocular trauma has sparked growing interest in studies on eye injuries[14]. Ocular injuries can assume unusual social and economic importance involving a huge cost in human unhappiness, economic inefficiency and monetary loss. However, no studies had been carried out on patterns of ocular trauma in the study area. So, in view of public health importance, this study will provide information on magnitude and pattern of ocular injuries in Kolkata and its surroundings. It will serve as the basis for designing and implementing preventive measures to be undertaken by respective authorities.

Aim and Objectives :

The aim of the study was to determine the epidemiology, aetiology and pattern of penetrating ocular trauma in Kolkata and its surroundings.

Material and Methods

It was a retrospective study carried out at KPC Medical College, Kolkata, West Bengal & RIO, Kolkata. We examined all the patients under slit lamp and classified the injuries based on Ocular Trauma Classification Group.

Inclusion Criteria :

All patients with open globe injuries who underwent surgery from July 2015 to January 2018 at KPC Calcutta Medical College, Kolkata, West Bengal & RIO, Kolkata were included in this study.

Exclusion Criteria:

(1) Patients who were not admitted in the hospital.
(2) Patients with blunt ocular trauma.
(3) Patients who underwent surgery outside.
(4) Patients with PL -Ve visual acuity.
(5) Foreign body on the cornea.

Results

We examined 192 eyes of 192 patients. Highest proportion of injuries occurred at home followed by outside. Mean period of presentation was 2.72 days. Most common visual acuity at presentation was less than 6/60 to perception of light. According to their sex distribution, males (54.1%) were slightly more affected than females (45.83%).

The age distribution of the patients shows that children at the age group of 0-10 years. were affected most (84). Commonest cause of trauma was Stone (52). Then comes Iron Rod/Piece (44) and Wood (32). Other causes were Cow's horn (14), Needle (12), Knife (8), Arrow (6), Sickle (6), Rubber Tube (4), Glass (4), Crackers (4), Metal Instrument (2), Bird Beak (2) and Pencil (2). The commonly noted associated features were iris prolapse (58), hyphamea (36), anterior capsular ruptura (22), lid tear (8) and impacted foreign body (6). In most of the cases, injury were in Zone 1, i.e., Zone 2 injury were 58 and 12 cases injury were in Zone 3 (Table 1).

Table 1 — *Showing Associated Features in Some Patients. Iris Prolapse was seen to be Most Common Associated Feature*

Associated Features	No of Cases
Iris prolapse	58
Hyphaema	36
Anterior capsular rupture	22
Lid tear	8
Impacted FB	6
Causes	No. of Cases
Stone	52
Iron rod/piece	44
Wood	32
Cow's horn	14
Needle	12
Knife	8
Arrow	6
Sickle	6
Rubber tube	4
Glass	4
Crackers	4
Metal Instrument	2
Bird beak	2
Pencil	2

Discussion

Ocular trauma is an important cause of blindness and ocular morbidity. Most previous studies on the profile and prognostic factors in ocular trauma have been carried out in more developed countries where modern facilities for managing ocular trauma are widely available[14,15]. There is paucity of studies on the profile of ocular trauma from the less developed countries[16]. Such studies can play an important role not only in defining the target groups for prevention and education on ocular trauma, but also in prognosticating ocular injuries at the time of presentation, prevent many unnecessary surgical procedures and also help ophthalmologists dealing with ocular trauma in making clinical decisions. Rohit Saxena et al found that bow and arrow was the most common cause of paediatric ocular trauma in their study. Boys were significantly more affected than girls[17]. Krishnaiah S *et al* found vegetative matter to be the most common rnode of trauma in their study. Males were more likely to have ocular trauma than females in this study also[18]. Govind Singh Titiyal et al found in their study that the commonest material accounting for trauma was wooden stick in 27 (16.7%) patients, followed by stone in 18 (10.9%), followed by finger nail trauma, fall from height and playing with ball in 6 cases each. Other miscellaneous mode of injury included fire cracker injury, injury with hot oil, blunt trauma, iron rod. Open globe injuries were found to be more common accounting for 75 (45.5%) patients than closed globe injuries, which accounted fot 54 (31.9%) patients[19].

DV Singh *et al* found that ocular injuries were most commonly caused by metallic objects (8.9%) and vegetable matter (8.9%). Other causative agents included bow and arrows (7.46%), sports related including crirket and tennis balls, badminton rackets and shuttle cocks, bat and gillie (7.6%), Hammer and chisel (6.7%), gunshot (3.2.%), blast injuries (2.5%) and other occupational injuries (6%).(30) According to a study conducted in Haryana, males (76.01%) were more frequently affected than females (23.99%). Among non-occupational injuries (61.74%) those occurring due to playing and sports among children were the main aetiological factor (33.67%). in occupational injuries (38.26%), those occurring during agricultural activities (19.9%) were most common followed by industrial accidents (12.24%). Cornea was the most affected part of eyeball (47.6%) followed by iris injury (32.64%)[14]. A study in a tertiary hospital of northern India shows 54.9% patients were below age of 25 years. and male : female ratio was 3.5 : 1. Road traffic accidents are the most common cause of ocular trauma and accounts for 87 cases (34%). Other causes included sports related and recreational 75 (29.7%), occupation related 51 (20.1%), domestic acci-

dents 24 (9.4%) and violence related 16 (6.3%). Among the type of injuries, open globe injuries accounted for 184 cases (72.7%) and 69 patients (27.3%) suffered closed globe injuries[21]. A study in a tertiary referral hospital in south Tamil Nadu shows 80% of the patients belonged to the age group of 25-35 years. 71% of them were male and 29% were female.

Regarding the cause of ocular trauma, road traffic accidents formed the4 major bulk of causes, follwed by assault and accidental fall[22]. Another study done in a tertiary rural hospital in Maharashtra shows maximum patients were males and 66 (92.95%) were between the age group of 11-30 years. The most common cause of injury was road traffic accidents followed by sports activities and assaults[23]. A recent study done in northern rural part of West Bengal in a tertiary hospital shows 83.7% were male. Adults, children and elderly comprised 79%, 17.6% and 3.3% of the study population. Closed globe injuries were the commonest (72.2%). More than 40% of the patients with eye injuries suffered these injuries at the workplace including agricultural activities[24].

In a study done on paediatric ocular trauma done at a tertiary eye care centre in western India showed that a higher frequency of ocular trauma occurred at home (45.62%), followed by school (31.33%), playground (13.82%) and finally the street (9.66%). Wooden stick was the cause of injury in 15.20% of patients followed by cricket ball (15.2%) showed that about 61.28% of paediatric ocular trauma occurred in children aged 1-10 years. Younger children have common physical vulnerability, lack of coordination and limited ability to avoid or escape from danger. Also, children show curiosity and a desire to explore, which may expose them to serious hazards[25]. In contrast, stone followed by iron and wood were found to be the most common mode of ocular trauma in our study. Males and females were almost equally affected with slightly higher male preponderance. Age group 0-10 years was most commonly affected.

We accept few limitations of our study such as:

(1) Since this was a retrospective record-based study, only data recorded in the register could be used. Detailed sociodemographic records were not kept at the institute records and hence not included in the study.

(2) No active followup of the patlents were undertaken and hence the long-term outcome of the patients were not available.

(3) There being a large number of alternate service providers in the study area, a part of the population especially from the higher socioeconomic strata is likely to attend these paid private providers. So, the figures in the present study likely to be underestimated as patients from higher socioeconomic strata would not have attended our hospital.

Conclusion

Although, eyes represent only 0.1% of the total body surface and only 0.27% of the anterior body surface, their significance to individuals and society is disproportionately higher. Those affected from ocular injuries often have to face loss of career opportunities, major lifestyle changes and occasionally permanent disfigurement. In addition to physical and psychological costs of eye injuries to the individual, the direct and indirect cost of eye injuries to the society is enormous.

Trauma has become the most common reason for extended hospitalisations of ophthalmic patients in industrialised nations[24]. In our study, serious ocular trauma frequently occurred at home followed by outside and the young were particularly at risk. Most common mode of trauma was stone. Most of the injuries were limited to cornea up to limbus. More adequate adult supervision and educational measures are necessary in order to reduce the prevalence of these accidents. The target groups for the purpose of prevention of ocular trauma are young males less than 40 years especially less than 25 years, students and those involved in mechanical jobs where they are working in close proximity to revolving machinery. These groups should be focused and made aware of the ocular trauma, its consequences and measures for prevention and early visit to eye care centre.

Conflict of Interest : Nil

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Case Report

Congenital hypothyroidism : Importance of neonatal screening in preventing neurocognitive deficit

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Congenital hypothyroidism is one of the most common preventable causes of mental retardation in children. The prognosis of infants detected by neonatal screening and started on treatment early is excellent, with intelligence quotients similar to sibling or classmate without the disease. Department of ENT, Head and Neck Surgery, KVG Medical College, Sullia. A 15 year old boy came with history of head ache, generalized body ache and lack of concentration in school. He was a case of congenital hypothyroidism and was on irregular treatment for the last 13 years. The patient was advised strictly to continue the oral l-thyroxine 100µg one hour before food and come for regular follow-up. Definite intellectual deterioration is seen if oral l-thyroxine is not started within 50 days of life and the deterioration is irreversible. So in India newborn screening programs should be implemented as a national program as it is very important to diagnose and treat congenital hypothyroidism as soon as possible and to treat it effectively.

[*J Indian Med Assoc* 2018; **116:** 36-8 & 40]

Key words **: Hypothyroidism, neonatal screening, l-thyroxine, neurocognitive development.**

Thyroid hormone plays a critical role in the development and maturation of the fetal brain[1]. Deficient production of thyroid hormone or a defect in thyroid hormone receptor activity can lead on to hypothyroidism[1]. Congenital hypothyroidism (CH) is one of the most common preventable causes of mental retardation in children[1]. The incidence in India is estimated to be 2.1 per 1000 live births which is at least 8 times higher than what is reported in western literature[1].

CH was defined as TSH more than 20 mIU/L at less than 2 weeks of age or TSH more than 10mIU/L after 2 weeks of age[2]. Clinical features are not present at birth as some maternal thyroid hormone pass trans-placentally and is sufficient till the newborns thyroid starts functioning on its own[3]. Newborn screening programs should be confirmed by finding an elevated serum TSH and low T4 or free T4 level[3]. Other diagnostic tests, such as thyroid radionuclide uptake and scan, thyroid sonography, or serum thyroglobulin determination may help pinpoint the underlying etiology, although treatment should be started without these tests[3].

Oral levothyroxine being the drug of choice and the starting dose is 10 to 15 µg/kg/day[3]. The immediate goals of treatment are to rapidly raise the serum T4 above 130 nmol/L (10 ug/dL) and normalize serum TSH levels[3]. Frequent biochemical thyroid profiles monitoring in infancy is essential to ensure optimal neurocognitive outcome[3]. Serum TSH and free T4 should be measured every 1-2 months in the first 6 months of life and every 3-4 months thereafter[3]. In general, the prognosis of infants detected by screening and started on treatment early is excellent, with intelligence quotients similar to sibling or classmate without the disease[3].

Studies show that a lower neurocognitive outcome may occur in those infants started at a later age (>30 days of age), on lower l-thyroxine doses than currently recommended, and in those infants with more severe hypothyroidism[3].

Neonatal screening programs for detection of CH in neonatal period are widespread in the developed countries for the last three decades and are fast gaining momentum in India as well[4-9]. In most screening programs blood samples are collected at 5-6 days age, but with large number of babies being discharged early, cord blood samples are being used as well[9,10].

In India, it is very difficult to call back babies once discharged and an effective health system whereby babies who can be examined at home is practically impossible[9,10]. Thus cord blood remains a very practical alternative for screening purposes, and thus is the practice in some Asian countries[9,10]. The Indian Academy of Pediatrics recommends the use of cord blood samples for screening for congenital hypothyroidism[11].

Case Report

A 15 year old boy came with history of head ache and generalized bodyache and lack of concentration in school. He was examined in the department of ENT, KVG medical college and was found that he was a case of CH and was on irregular treatment for the last 13 years. Biochemical thyroid profile showed T3- 59ng/dl, T4 - 2.10 µg/dl and TSH -38.39 µIU/ml suggesting hypothyroid status. The patient had stopped taking elthroxin for the past 1 month causing a recurrence of the hypothyroid status.

Sonography of the neck showed both lobes were small in size with mild hypoechoic echotexture. The right lobe was 1.09x0.36x0.98 cm in dimension and the left lobe 0.8x 0.67x 0.96 cm in dimension. A benign lymph node measuring 5.7x2.7 mm was noted which had a fatty hilum on the left side at level[2].Major vessels of the neck were normal. The sonography concluded that the overall size of the thyroid was reduced with mild hypoechoic echotexture and benign cervical lymphadenopathy (Fig 1).

Presently the patient did not complain of decreased urine output or passing high colored urine but had constipation. The parents complained of poor school performance less in par with other children of his age. Slurred speech was present but no hoarseness was seen. Cold intolerance was present but no history of decreased activities and played well with other children.

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Neonatal screening was not done in this patient and clinical diagnosis was missed in him till 2½ years. At the age of 2½ the parents took the baby to clinician with swelling of the face and abdomen of 1 week duration. The swelling and puffiness were uniform throughout his face not localized to the eyes and present only in morning hours. A uniform painless distension of the abdomen was seen of week duration. Reflexes were exaggerated but superficial and babinski reflexes were diminished. Clinical diagnosis of hypothyroidism was done and the investigations showed T3- 0.25ng/ml (0.75-2.4), T4- 0.96µg/dl (4.7-11.1), TSH- 51.90 µ IU/ml (0.2-5.0), serum cholesterol -566.0 mg/dl, Hb%- 9.0g/dl, blood urea- 35 mg/dl, serum creatinine – 1.8 mg/dl, total protein- 505 g/ml, serum albumin-2.5 gm/dl, serum globulin- 3.0 g/ml, TC -5000 cells/mm^3, DC-neutrophil-40%,eosinophil-2%, lymphocyte- 56%, basophil- 5%, monocytes- 2%.

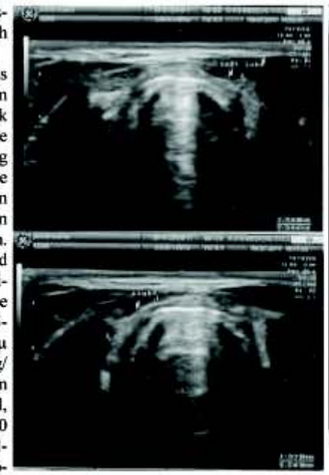

Fig 1 — Sonography of the right and left thyroid lobes showing short dimensions of the thyroid gland

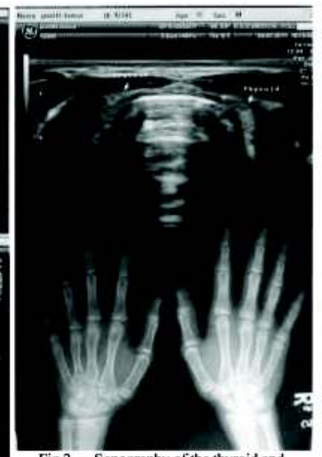

Fig 2 — Sonography of the thyroid and xray of the wrists

Peripheral blood smear showed normocytic hypochromic anemia. ECG showing low voltage complexes in all leads. Chest X-ray was within normal limits. X-rays of both the wrists joints showed delayed bone age corresponding to 5 years of age and the present X-ray wrists seems normal (Fig 2). His younger sister and brother were screened for hypothyroidism and found to be normal. In 100µg of elthroxin once orally in the morning one hour before food was started at 2½ years of age warning his parents not to stop the drug at any instance. The patient was advised initial 3 month follow up till 4 years and 6 months follow up till 10 years as literacy in family was low frequent follow were necessary. The patient had regular follow up till 6 years and later became irregular. He consulted with complains of relapse and later was advised to continue l-thyroxine. The patient is seen at 2½ years , 14 years and at 15 years (Fig 3).

Discussion

Congenital hypothyroidism (CH) is defined as thyroid hormone deficiency present at birth[3]. Thyroid hormone deficiency at birth is most commonly caused by a problem with thyroid gland development (dysgenesis) or a disorder of thyroid hormone biosynthesis (dyshormonogenesis)[3]. These disorders result in primary hypothyroidism[3].

Secondary or central hypothyroidism at birth results from a deficiency of thyroid stimulating hormone (TSH)[3]. Congenital hypothyroidism is classified into permanent and transient CH[3]. Permanent CH refers to a persistent deficiency of thyroid hormone that requires life-long treatment[3]. Transient CH refers to a temporary deficiency of thyroid hormone, discovered at birth, but then recovering to normal thyroid hormone production[3]. Recovery to euthyroidism typically occurs in the first few months or years of life[3].

Permanent CH can be further classified into permanent primary and secondary (or central) CH; transient primary CH has also been reported[3]. The underlying etiology of CH typically will determine whether hypothyroidism is permanent or transient, primary, secondary, or peripheral, and whether there is involvement of other organ systems[3]. Screening a newborn for congenital hypothyroidism is very important as mental retardation can be prevented in 85% of the cases with early initiation of thyroxine supplementation therapy before 3 months of age[12]. The incidence of the cases have risen from 1:7,000 to 1:10,000 to 1:3,000 to 1:4,000 after the introduction of worldwide newborn screening programs[13,14].

The incidence of congenital hypothyroidism in India varies from 1:2500 to 1:2800 live births[15]. Universal neonatal screening has been acknowledged as the most effective method to prevent the severe developmental and physical morbidities associated with congenital hypothyroidism[16]. However, despite proven benefits, efforts to implement it in India are still in its infancy[16]. CH features manifest minimally at birth making it difficult to diagnose on the basis of clinical features alone[16].

Clinical diagnosis is made in only 10% children in the first month of life and 30% in the first 3 months[17]. Hence there is a high risk of delayed diagnosis exposing the child to various degrees of developmental delay[17]. In view of the high incidence, apparently asymptomatic nature, propensity to cause neuro-developmental delay and residual impairment even with treatment, early detection and treatment of CH would be the most cost effective method to confront this problem[3]. Despite the crushing evidence of high inci-

Fig 3 — Growth patterns at 2 ½ years, 14 years and 15 years

dence of CH, India continues to await a plausible universal screening program[3]. It is high time we start routine neonatal screening for CH to tackle this preventable cause of mental retardation[3].

As considerable difference in inheritance, prognosis and therapy are present, finding the etiology of the condition is important[18-20]. Thyroid dysgenesis (aplasia, ectopia, or hypoplasia) amounts to 80%, dyshormonogenesis amounts to 10-15%, pituitary or hypothalamic hypothyroidism, transient hypothyroidism and autoimmune mechanisms less than 5% of cases of CH[18-20]. Thyroid hormone replacement should be administered to all cases with biochemical confirmation of the diagnosis of hypothyroidism[12]. Even, cases of ectopic gland should be treated even if laboratory data reveal borderline or compensated hypothyroidism to prevent complications from enlargement of lingual or sublingual thyroid tissues[19]. Screening the newborn for presence or absence of functioning thyroid tissues is clinically important as functioning thyroid tissues have better neuropsychologic prognoses than those without[19,20].

CH due to enzyme defect in thyroxine production follow an autosomal recessive pattern of inheritance hence genetic counseling is required for patients wih this disorder[18-20]. CH could also result from transient abnormality in thyroid gland function, which subsequently recovers[21]. The possible explanations include iodine deficiency, transplacental passage of maternal TSH-binding inhibitory antibodies, and maternal exposure to radioiodine, iodine or antithyroid drugs[21].

Muir *et al*, in their 50 case study concluded that sonography cannot be an alternative to thyroid scintigraphy to define the cause of CH[20]. Takashima *et al*, suggested that thyroid scintigraphy is required only in patients with no visibility of the thyroid gland in the normal location and patients with an enlarged gland in the normal anatomic place with ultrasound[22]. Sonographic analysis has a potential to predict the prognosis of patients with suspected CH[22].

The condition is often subtle in presentation and many newborn infants remain undiagnosed at birth[23,24]. This is due to passage of maternal thyroid hormone across the placenta as it has protective effect on the fetal brain[25,26]. Even it is reported that the commonest form of CH has some moderately functioning thyroid tissue[25,26]. As the clinical features developed slowly and the need for early treatment has led to rampant newborn screening programs[25,26]. Only 35% world newborn population are screened and the major hit are the third world population, so clinicians here should recognize the disorder early[25,26].

On initial examination, the most common signs are umbilical hernia, macroglossia and cold or mottled skin[25,26]. Symptoms are not typical but maternal and pregnancy history is informative[25,26]. In 20% of cases gestation exceeds 42 weeks[25,26]. Hoarse cry, constipation, neonatal hyperbilirubinemia more than 3 weeks due to immaturity of hepatic glucuronyl transferase are common features seen[25,26].

Thyroid hormone is also important in the formation and maturation of bone[27,28]. Deficiency leads to a wide posterior fontanel of greater than 5 mm[27,28]. This, along with persistent jaundice and poor feeding are the most striking clinical features[27,28]. Common symptoms include decreased activity and increased sleep, feeding difficulty, constipation, and prolonged jaundice. On examination, common signs include myxedematous facies, large fontanels, macroglossia, a distended abdomen with umbilical hernia, and hypotonia[3]. Neurologic examination findings include hypotonia with delayed reflexes[23]. Skin may be cool to touch and mottled in appearance reflecting circulatory compromise[23]. X-rays can reveal absent femoral epiphyses in up to 54%[29].

CH appears to be associated with an increased risk of congenital malformations[30]. The prevalence of these extra thyroidal congenital malformations amount to 8.4%, cardiac malformations being more common[30]. Other associated malformations include spiky hair, cleft palate, neurologic abnormalities and genitourinary malformations[30]. Also, the incidence of congenital hypothyroidism is increased in patients with Down's Syndrome[31].

Conclusion

On detecting congenital hypothyroidism by neonatal thyroid screening programs treatment should be commenced within first month of life which makes prognosis for intellectual development better. Complete restoration of intellectual performance may not always be possible due to prenatal thyroxine deficiency.

Definite intellectual deterioration is seen if the treatment is not started within 50 days of life and the deterioration is irreversible. So in India newborn screening programs should be implemented as a national program as it is very important to diagnose and treat congenital hypothyroidism as soon as possible and to treat it effectively.

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Case Report

Zidovudine induced late bone marrow suppression : A rare occurrence

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Zidovudine is one of the important components of Anti retroviral Therapy in India. However, therapy with Zidovudine is associated with many side effects. Anemia or Bone marrow suppression leading to pancytopenia is common with Zidovudine in early days of initiation of therapy. We report a case where patient developed pancytopenia, four years after continuous Zidovudine therapy. Regular blood count monitoring is essential in patients on Zidovudine.

[*J Indian Med Assoc* 2018; **116:** 39-40]

Key words **: Zidovudine (AZT), Anemia, Bone marrow suppression, (ART) Anti retroviral therapy**

Since 2000, ART is widely available in India. Because of cost constraints, AZT is still the main drug used in many parts of our country. Anemia or Bone marrow suppression is seen usually within few months of starting AZT therapy. The incidence of this side effect is more if before initiation of therapy there is presence of anemia. It is general consensus to avoid AZT in presence of anemia[1]. In addition to AZT, simultaneous use of other drugs like cotrimoxazole[2], Amphotericin B, Dapsone, Sulfadiazine increases the chance anemia. Some opportunistic infections like Mycobacteria, parvovirus can also cause bone marrow suppression in patients on ART. We report a case of HIV infected patient on ART who developed bone marrow suppression after 4 years of continuous AZT therapy. This side effect is rare to develop years after initiation of AZT. Anticipating this rare event and continuous blood count monitoring is recommended even if patient tolerates initial AZT therapy.

Case Report

A 30 years old female, housewife, was screened for HIV infection in view of history of herpes zoster. Her husband had died 6 years before and was HIV-1 infected. She was asymptomatic and her general and systemic examination was normal. She was positive for HIV-1 with ELISA and the same confirmed by western blot in August 2005.

Investigations — Her baseline investigations were Hb -11.9 gm/dl, TLC- 7500/dl (N64, L24, E9, and M3), Platlets-131000/dl, Liver and Kidney functions were normal. She was HBsAg and TPHA non reactive. Ultrasonography of abdomen showed absent right kidney with compensatory hypertrophy of left kidney. Baseline CD4 was 184/micro liter. Plasma viral load was not done. She was started on AZT+3TC+NVP from August 2005. She also received cotrimoxazole prophylaxis till august 2007.

Follow-up — On follow up after 2 months her investigations were Hb-9.2 gm/dl, TLC-3100/dl (N48, L45, E2, and M5) MCV-94.7, Platelets-131000/dl, and SGPT-14. She was shifted to D4T (Stavudine) +3TC+NVP from Oct 2005 because of anemia. One month later, hemogram improved (Hb-10.4gm%, TLC-4000/dl and platelets – 240000/dl). Her serial viral loads and CD4 counts are shown in Table 1.

Table 1 — *Serial PVL and CD4 counts*

Month	CD4 count per microlitre	Plasma Viral Load (copies/ml)
August 2005	184	Not done
August 2007	312	< 20
Feb 2008	360	Not done
Nov 2008	576	<50
March 2010	392	<50
Dec 2011	501	<20
Sept.2012	426	<20

All PVL were done by RT PCR except in Dec 2011 (COBAS TAQMAN)

After 3 years of D4T therapy, she was re-shifted on AZT+3TC+ NVP in February 2008, because of lipoatrophy. The option of other ART was not considered due to non affordability.

She developed fever, anorexia and nonproductive cough in Jan 2012. She was investigated in other hospital at her place and was found to have pleural effusion. The pleural effusion was exudative with lymphocytic predominance. She was advised to take 4 drug ATT (Isoniazide (H), Rifampicin (R), Pyrazinamide (Z) and ethambutol (E)). Her ART was not changed by her treating Doctor, at her town, probably was unaware of drug interactions between NVP & Rifampicin. Rifampicin is known to reduce blood levels of NVP low enough as if being given in sub therapeutic doses to produce resistance to NVP. Hence NVP is changed to Efavirenz when Rifampicin is to be given.

She visited our hospital in March 2012 with extreme fatigability, weight loss, and anorexia. On examination she had right sided pleural effusion. Her lab results were Hb-2.3 gm%, MCV-127fl, TLC-3300/dl (N51,L44,M5), Platelet count- 88000/dl, Sr. Ferritin-623ng/ml (F-4.63- 204ng/ml), Sr. Lactate 15.1 mg/dl(4.5-19.8mg/dl), Sr. Creatinine 1.04mg/dl, Pleural fluid Protein 3.58 Gm%, leukocyte count- 580 (N 2%,L 98%), ADA-24.2 (N <25). USG abdomen was normal except absent right kidney. Her bone marrow trephine biopsy showed hypo plastic marrow with megaloblastoid changes. Serum erythropoietin-17347 mIU/Ml (5.4-31). Her regimen was switched to 3TC+D4T+EFV and RHE was continued. She also received red cell support for anemia. After 2 months of follow up her Hemogram showed Hb- 11.2gm%, TLC-3600/dl (N41,L47,E3,M8), platelet 196000/dl. She received 6 months of ATT and is on 3TC+D4t+NVP. She is doing well at present. (Hb 14, TLC-5840, Plt-214000)

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Discussion

Zidovudine is important component of ART in India. Common side effects of AZT are anemia[3,4] granulocytopenia, lactic acidosis, hepatic steatosis, headache and nausea.

Anemia is most common hematologic abnormality in HIV infected patients. The specific reversible causes are drug toxicity, opportunistic infections like mycobacteria, parvovirus etc, and nutritional deficiencies. AZT causes maturation arrest in the marrow causing pancytopenia. The effect is more pronounced in erythroid precursors leading to anemia[5]. High serum erythropoietin levels can differentiate between anemia secondary to AZT and anemia due to other causes[6].

The phenomenon of anemia / bone marrow suppression secondary to AZT is seen mostly within few days to one year of initiating the therapy[7].

In our patient, the bone marrow suppression was seen after four years of uneventful AZT therapy from February 2008 to January 2012. She initially had mild anemia which subsided on shifting to D4T.Re- introduction of AZT has lead to severe bone marrow suppression. She had pleural tuberculosis for which she was on ATT (HRZE). There are no known drug interactions between HRZE and AZT which can increase the drug levels of AZT in blood.8 INH itself can lead to sideroblastic anemia which was not the blood picture in our case. Moreover, she had high serum erythropoietin levels and her blood picture improved after stopping AZT.

At present she is on Stavudine, lamivudine and Nevirapine and her viral load is well suppressed.

This case highlights the importance of regular monitoring of blood counts in patients on AZT even after one year of uneventful therapy. Timely drug withdrawal can prevent future complications due to bone marrow suppression. Learning from this case, it would not be wrong to suggest avoiding re-challenge of AZT in such cases.

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Case Report

Astrocytoma arising in a dermoid cyst of the ovary and coincidence of Rhinosporidiosis of nose & nasopharynx in an adolescent girl

Mahamaya Sharma[1], Subrata Lahiri[2]

Malignant transformation of mature cystic teratoma of ovary mainly affects squamous epithelium. The neuroectodermal component undergoing malignant change is a highly exceptional event. Reports on astrocytic tumour arising in a mature and immature teratoma in ovary are extremely rare and therefore, guideline on treatment is not clear. In view of exceptionally rare incidence, this tumour needs documentation and formulation of treatment guideline. This report documents a case of 'Astrocytoma grade III arising in a mature cystic teratoma of the ovary in an adolescent girl and coincidence of Rhinosporidiosis of nose and nasopharynx'.

[*J Indian Med Assoc* 2018; **116:** 41-2 & 44]

Key words **: Astrocytoma grade III, malignant transformation, ovarian mature cystic teratoma, rhinosporidiosis.**

Malignant transformation of mature cystic teratoma of ovary is reported in less than 2% of cases. Although all elements can undergo this transformation, it is mostly seen in squamous epithelium. Malignant transformation mainly affects post-menopausal woman. The neuroectodermal component undergoing malignant change is a highly exceptional event. Here, we describe a rare case of mature cystic teratoma of the ovary with malignant transformation to astrocytoma grade III. Simultaneous occurrence of rhinosporidiosis of nose and nasopharynx also has been documented.

Case Report

A 17 years adolescent girl presented gradual swelling of lower abdomen of three months duration. There were no systemic complaints except a red flashy mass in nose and nasopharynx. An ultrasonography and computerised tomography scan done showed a large cystic mass arising from right ovary and measuring 27 cm in its greatest diameter with irregular outline. Multiple foci of calcification and daughter cysts were seen inside. No ascites were noted. She was anaemic (Hb-8.9 gm %) and had elevated CA-125 level (55.2 µ/ml). A clinical diagnosis of benign ovarian teratoma was made and right salpingo –oophorectomy was done. No regional lymphadenopathy or omental nodules were palpated.

Pathologic findings :

Macroscopic examination showed a large cystic mass measuring 26x15 x13 cm filled with serous fluid of 1.5 litres. Cut section of the mass revealed multiple daughter cysts with hair, sebaceous material and cartilage inside. Multiple solid nodules were projecting from outer surface. The capsule remained intact. Microscopy revealed cystic spaces lined with epidermis and glandular epithelium. The cyst wall contains sebaceous and sweat glands, hair follicles, bronchial epithelium, serous & mucinous glands, cartilage, bone, smooth muscle, fibrous and fatty tissue, neural tissue and ganglion cells of sympathetic type (Fig 1).

The solid nodules on the surface and more solid areas of the cyst showed glial tissue and choroid plexus (Fig 2). Some foci were cellular (Fig 3 & Fig 4) with moderate nuclear pleomorphism and hyperchromasia, vascular proliferation and mitotic activity. The histopathological diagnosis was mature cystic teratoma with malignant transformation to astrocytoma (grade III, World Health Organisation1993 classification). Since the tumour was completely restricted to ovary, no adjuvant therapy was given. Although she was advised chemotherapy with etoposide, cisplatin & bleomycin by referral cancer centre keeping the probability of peritoneal implants, yet she was put off chemotherapy for her limited stage I a tumour. Furthermore, the patient was evaluated regularly by post-operative clinical, laboratory and imaging studies and remained negative.

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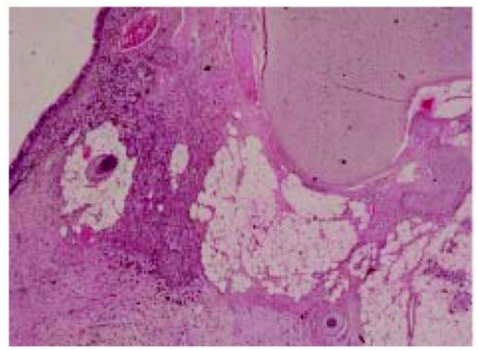

Fig 1 — The tumour is composed of glandular epithelium, hair follicles, adipose and fibrous tissue, cartilage, ganglion cells of sympathetic type and mature glial tissue. (H&E x 200)

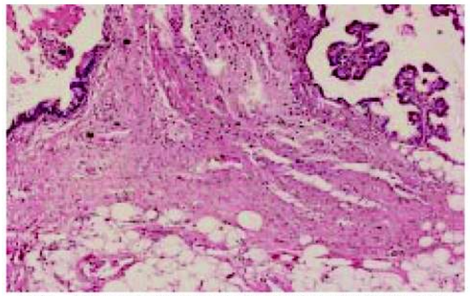

Fig 2 — The tumour is composed of neural tissue and choroid plexus along with glandular epithelium and adipose tissue. (H&E x 100)

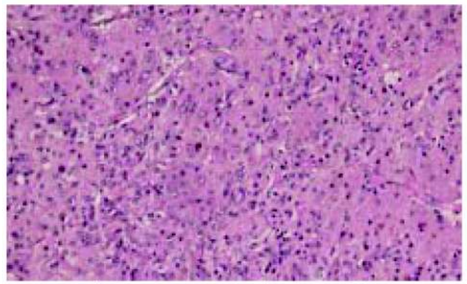

Fig 3 — Astrocytoma, grade III (H&E x 200)

Associated findings :

Red fleshy mass coming through nose and nasopharynx , was excised 15 days before salpingo –oophorectomy. Histopathological examination of excised specimen showed the presence of rhinosporidiosis.

Discussion

Teratoma with malignant transformation (TMT) refers to the occurrence of somatic non-germ cell malignancy within teratoma. Malignant transformation of teratoma in ovary is reported in less than 2% of benign cystic teratomas. This is usually observed in post menopausal patients. The most common malignant transformation is squamous cell carcinoma. Benign nervous tissue is present in at least four –fifths of all teratomas[1,2]. However the malignancy of neural element is the least common event. To the best of our knowledge only 21 cases including this one have been documented in the literature[1-10]. Among these, 14 were developed within a mature cystic teratoma. Glioblastoma multiform (astrocytoma, grade IV) was the predominating type (13 cases) whereas fibrillary astrocytoma and pilocytic astrocytoma of grade I & II was reported in seven cases. However, to the best our knowledge, grade III astrocytoma (WHO classification) arising within a mature cystic ovarian teratoma has not been reported in the literature.

Astrocytic and ependymal tissue, nerve ganglia of sympathetic type, nerve bundles accompanied by Schwann cells and choroid plexus containing cerebrospiral fluid may be seen within mature teratomas[1].

Astrocytoma of grade III of central nervous system designated by World Health Organization is an intermediate lesion between

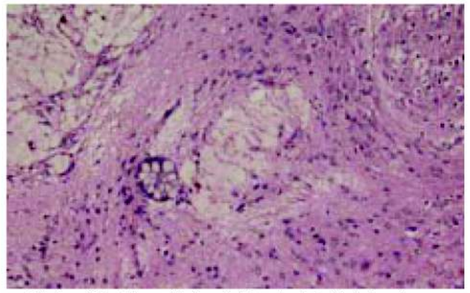

Fig 4 — Glandular epithelium is intermingled with Astrocytoma. (H&E x 100)

well differentiated astrocytoma of grade I & II and glioblastoma multiform of grade IV. This is one that typically exceeds well differentiated astrocytoma in terms of cellularity, nuclear pleomorphism and hyperchromasia, vascular proliferation and mitotic activity but lacking marked cellularity and neurosis of glioblastoma multiform. The present case qualifies all the features of grade III astrocytoma.

Peritoneal implantation is the common mode of spread of TMT. The malignant glial tissue, although a rare event, have the capability to settle at ectopic site ie, peritoneal cavity as gliomatosis peritonei from mature ovarian teratoma[11] and peritoneal glioblastoma from immature ovarian teratoma even after several years of primary surgery[12]. It is well documented in the literature that astrocytic tumor of grade I, II & IV arising in a benign cystic teratoma, complete excision of the tumour limited to ovary provides disease free survival without adjuvant chemotherapy[2,3,9] like the present case. We found support in the literature to withdraw adjuvant chemotherapy for her limited stage I a tumour. Today, 33 months after the surgery she is healthy and doing well.

Rhinosporidiosis is a chronic granulomatous disease and caused by Rhinosporidium seeberi. Rhinosporidiosis is endemic in eastern and northern India. Nose and nasopharynx is the commonest site. The presence of rhinosporidiosis in this case may be just concurrent. Review of literature did not reveal any association with TMT.

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Case Report

Congenital nephrotic syndrome associated with congenital cytomegalovirus infection

S D Sharma[1], R K Gupta[2], Alok Kumar Goyal[3], Anurag Sarna[4]

Congenital nephrotic syndrome (CNS) is a rare disorder characterized by heavy proteinuria, hypoalbuminaemia and oedema in first 3 months of life. The majority of cases are caused by genetic defect in the components of the glomerular filtration barrier, specially nephrin and podocin. Other causes of congenital nephrotic syndrome include congenital infections such as syphilis, toxoplasmosis, rubella, cytomegalovirus (CMV), HIV and hepatitis B. We are reporting a case of CNS in a 2 months old male child associated with CMV infection. On routine urine analysis, the patient had heavy (++++) proteinuria without hematuria or pyuria. In 24 hours protein excretion was 12.5 gm/24 hrs, serum total protein 4 gm/dl, serum albumin 2.0 gm/dl,total cholesterol 347.0mg/dl, urinary creatinine 41.0mg%, urinary protein 500mg/dl, protein to creatinine ratio was 12.1:1 and TSH was normal. IgM & IgG antibodies for CMV were raised and maternal IgG for CMV was strongly positive. PCR for CMV in urine was sent and it was positive, which is strongly suggestive of active CMV infection.

[*J Indian Med Assoc* 2018; **116:** 43-4]

Key words **: Cytomelovirus(CMV), Congenital Nephrotic Syndrome(CNS), Proteinuria, Ganciclovir.**

Congenital nephrotic syndrome (CNS) is a rare disorder characterized by heavy proteinuria, hypoalbuminaemia and oedema in first 3 months of life[1]. CNS seems to be primarily associated with defect in the structure and function of podocyte foot processes but can be associated in rare cases, with malformation syndromes, infections or systemic diseases. The prototype and probably the most severe form of CNS is the finnish type nephrotic syndrome[2]. Other causes of congenital nephrotic syndrome include congenital infections such as syphilis, toxoplasmosis, rubella, cytomegalovirus (CMV), HIV and hepatitis B[3]. CMV infection has been reported as a cause of CNS in few studies[2,4]. We are presenting a case of CNS in 2 months old child due to congenital cytomegalovirus. To the best of our knowledge perhaps this is first case of PCR (Polymerase chain reaction) proved CMV infection associated with CNS.

Case Report

A 2 months old male child presented with history of developing generalized oedema since 1 month of life. The child was full term appropriate for gestation age hospital delivered, without any significant antenatal and family history and born from non-consanguineous marriage. On examination his weight and height were 4.5 kg and 55.5 cm respectively, pitting oedema was present all over body, with presence of ascites. His BP was 60/40 mm Hg, liver was 2 cm below right costal margin and spleen was not palpable. The kidney were not ballotable and renal angle was not tender, other system examination and fundus revealed no abnormality.

On routine urine analysis, the patient had heavy (++++) proteinuria without hematuria or pyuria. His complete blood count (CBC) revealed Haemoglobin 10.6 gm/dl, total leucocyte count 10,560/cmm with diffrential leucocyte count N26%, L69%. SGOT, SGPT, BUN, serum creatinine were in normal range. USG abdomen revealed mildly enlarged kidney with bilateral brightness, suggestive of medical renal disease, with massive ascites. In view of persistent heavy proteinuria and anasarca, a provisional diagnosis of congenital nephrotic syndrome was made. In 24 hours protein excretion was 12.5 gm/24 hours, serum total protein 4 gm/dl, serum albumin 2.0 gm/dl, total lipid 1398.0mg/dl, triglycerides 690.0gm/dl, phospholipid 310.0 mg/dl, total cholesterol 347.0mg/dl, urinary protein to creatinine ratio was 12.1:1 and TSH was normal. Tuberculin test was negative and chest and skull skiagram, and stool examination were normal.

Other biochemical investigation included serum VDRL, HbsAg, HIV and IgM & IgG titre against toxoplasmosis and rubella were negative. IgM & IgG antibodies for CMV were raised (levels 1.356 & 0.613 respectively) and maternal IgG for CMV was strongly positive. PCR for CMV in urine was positive, which is strongly suggestive of active CMV infection. Parents refused for renal biopsy. A final diagnosis of CNS with congenital cytomegalovirus infection was made and patient was put on IV Ganciclovir (5 mg/kg/dose BD) for 14 days followed by oral Valganciclovir (15mg/kg/dose BD). Initially child improved and urinary albumin came to one + only. Later on the child succumbed to infection and died on 36 day of treatment.

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Discussion

CNS comprises a heterogenic group of renal diseases that results in increased postnatal glomerular permeability and is manifested by massive proteinuria[2]. The majority of cases are caused by genetic defect in the components of the glomerular filtration barrier, specially nephrin and podocin. Commonest type is finnish type CNS which is caused by mutation in NPHS1 gene which encodes for nephrin. Mutation in the NPHS2 gene, encoding for a podocyte

protein podocin is another common cause. Few cases of CNS are described in literature due to mutation Wilms tumor suppressor gene (WT1) & in the Laminin-ß2 (LAMB2) gene. Congenital CMV, syphilis, toxoplasmosis, congenital rubella, hepatitis B virus and HIV infection may also cause CNS[3,5].

In severe form of CNS, generalized oedema, massive proteinuria and hypoalbuminaemia can be detected in newborn period. Renal biopsy does not reveal the aetiology of CNS. Genetic analysis is the method of choice for precise CNS diagnosis[5].

There is no specific therapy for CNS and death usually occurs within the first two years of life. The cause of death is usually secondary infection particularly Gram negative septicaemia but if they survive long enough they may die due to renal failure[6]. The goal of medical therapy is to provide good nutrition, to control oedema by parenteral protein supplementation, and to prevent infections and thrombosis. Few medical centers advocate unilateral nephrectomy or percutaneous renal ablation. Most institutions now recommend early bilateral nephrectomy in CNF patients, followed by dialysis, adequate nutritional support, and transplantation[7].

CMV infection has been associated with congenital & infantile NS. However, only few cases have been reported in literature[2,4,8,9].

VP Dange *et al* reported a case of CNS in 1993 with isolated mesangioproliferative histology, and strong serological evidences of CMV infection, but PCR/Culture was not done[4]. We are presenting the first case of serologically as well as PCR proved congenital CMV infection associated with CNS from India.

In present case positive IgM & IgG and urine PCR for CMV in child and positive IgG for CMV in mother, together with clinical and biochemical evidence of CNS, suggest a causal relationship. This child also had anasarca and anaemia. This case did not have other evidences of CMV infection such as hepato-splenomegaly, thrombocytopenia, rashes, growth retardation & retinal abnormalities.

Currently, Ganciclovir and Valganciclovir are employed in the treatment of congenital CMV infection[10].

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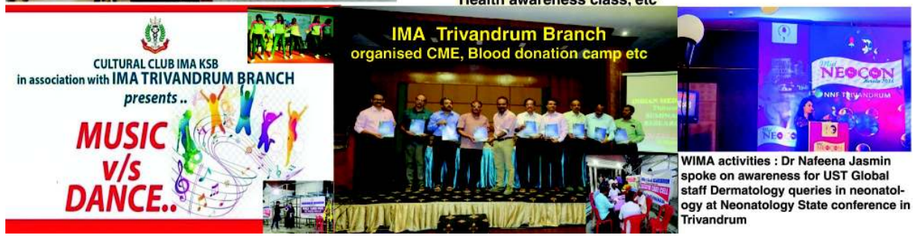
Activities Report

IMA Tellicherry Branch Organised Asthma, Allergy Detection & Medical Check Up Camp, World Suicide Prevention Day, CME on Type 2 Diabetes-Advanced Care, World Alzheimer's Day, World Heart Day,
IMA Thalassery Branch donated more than 1 crore rupees to Chief ministers distress Relief fund which includes salary chalange by Govt Doctors.

IMA Thalassery Branch organised Care for Elderly Project on World Elderly Day (30/9/2018) & Free Medical Camp

IMA Cochin Branch organised World Food Day, World Anaesthesia Day on 16th October, World Girl Child Day, World Mental Health Day Celebrations, IMA Blood Donation Week Celebrations, Health awareness class, etc



WIMA activities : Dr Nafeena Jasmin spoke on awareness for UST Global staff Dermatology queries in neonatology at Neonatology State conference in Trivandrum

Victory is always possible for the people who refuse to stop fighting. The supreme quality for leadership is unquestionably integrity.

IMA National President Dr Ravi Wankhedkar at installation of new IMA Andhra Pradesh president Dr Shrihari Rao in Tirupati

Ambassador of Taiwan with National President Dr Ravi Wankhedkar to discuss ways to increase cooperation in field of medicine between two countries at IMA HQs, New Delhi

Dr Ravi Wankhedkar, NP delivering Oration on Legal Aspects of Medical Practice in the Global Cardio Diabetes Conclave in Mumbai

Receving National President Elect Dr Santanu Sen and JIMA Editor Dr Samarendra Kumar Basu at the Trivandrum Airport

National President Elect Dr Santanu Sen Installing Kerala State President Dr M E Sugathan in the State Conference at Kollam on 11/11/2018

Staffs of JIMA, Your Health & IMA Building, Kolkata