Antibiotic Sensitivity and Clinico-epidemiological Profile of Staphylococcal Infections

This hospital-based study describes the antibiotic sensitivity of 66 *S. aureus* isolates from the admitted children (age 0-18 y) in a tertiary hospital of Kolkata, India. Methicillin-resistant *S. aureus* constituted 16.7% (*n*=11) of the isolates. Clindamycin-resistance was observed in 60% and 82% of methicillin-sensitive and methicillin-resistant strains, respectively.

Keywords: *Antibiotic resistance, Epidemiology, S.aureus*.

There is a significant difference in prevalence and antibiotics sensitivity of *Staphylococcus aureus* infections across the world [1]. Reports available regarding the epidemiology of *S. aureus* in India are scarce, especially in the pediatric population [2,3]. This observational study was conducted from August 2014 to September 2015 at Institute of Child Health, Kolkata, India. Hospitalized children (age 0-18 y) with culture-positive S. *aureus* infection were included in the study. Cases from out-patient department were excluded. Ethical clearance was obtained from the institutional ethics committee.

Blood, pus, cerebro-spinal fluid (CSF) or other body fluids (pleural, pericardial and joint fluids) were collected from patients having suspected infection, and sent for culture and sensitivity. After informed written consent, data were collected for age, sex, clinical features and antibiotic sensitivity pattern. Infections were defined as community acquired (CA), hospital acquired (HA) and Healthcare-associated Community-onset (HACO) [4]. Isolates were identified and antibiotic sensitivity was tested as per Clinical and Laboratory Standards Institute guidelines [5].

A total of 1017 specimens collected from admitted patients during study period showed culture positivity. Of these, 13% (*n*=125) were positive for *Staphylococcus* species; 52.8% (*n*=66) were *S. aureus* and 47.2% (*n*=59) were CONS. Of the total CONS, 33 isolates were positive within 24 hours, of which 48.5% (*n*=16) were in neonates. Clinico-epidemiological data of included children is presented in ***Table* I.**

In 2013, Indian Network for Surveillance of Antimicrobial Resistance (INSAR) reported proportion of methicillin-resistant *S. aureus* (MRSA) between 22%-68% in Indian hospitals [6]. Contrary to the rising trends of MRSA, it was documented in only 16.7% patients in our study, most of which was CA-MRSA (*n*=8). Community acquired infections (75.8%, *n*=50) out-numbered hospital acquired infections in our study, similar to that reported by Eshwara, *et al*. [3].

TABLE 1 PROFILE OF *STAPHYLOCOCCUS AUREUS* INFECTION IN OUR STUDY

Study variables	*All cases (n=66) No.*	*MRSA (n=11) No.*	*MSSA (n=55) No.*
Community acquired	50	8	42
Healthcare associated community onset	12	2	10
Hospital acquired	4	1	3
Age category			
< 1 year	29	5	24
1 year - < 5 year	23	5	18
> 5 year	14	1	13
Diagnosis			
Skin and soft tissue infection	38	6	32
Septicemia	7	1	6
Pneumonia	7	1	6
Meningitis	3	1	2
Bone and joint space	6	1	5
Disseminated	7	1	6
Specimen			
BACTEC	28	5	23
CSF	2	1	1
Pus	42	7	35
Others (pleural fluid, joint)	1	0	1
Multiple sites	7	1	6

All Staphylococcus isolates in our study were sensitive to Vancomycin, Linezolid and Teicoplanin. Methicillin-sensitive *S. aureus* (MSSA) were also sensitive to Amikacin, Gentamycin and Levofloxacin. Clindamycin resistance (inducible + constitutional) among MSSA, MRSA, CA-MRSA was 60%, 81.8% and 87.5%, respectively. Shenoy, *et al*. [7] showed about 22.9% CA-MRSA clindamycin resistant in India, which was considerably less than our study. We also saw increased resistance of MSSA, MRSA and CA-MRSA towards Co-trimoxazole, Erythromycin, Ciprofloxacin and Ofloxacin similar to findings by Eshwara, *et al*. [3].

Our study had limitations of a small sample size. We also could not test for *SCC mecA* gene and PVL toxins. Rational antibiotic policy to prevent the rise in resistant staphylococci is the need of the hour.

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Etiology and Short-term Outcome of First Seizure in Hospitalized Infants

We enrolled 75 consecutive infants presenting with history of first seizure at a tertiary-care hospital in New Delhi, India. Clinical and biochemical work-up for etiology, and electroencephalography were performed in all infants. Developmental assessment was done 3-month after discharge. 72% had generalized seizures, and fever was the commonest co-morbidity (57.3%). 68% had provoked seizures, mainly due to hypocalcemia (34.3%) or neuro-infections (29.3%). Seven (9.3%) infants died during hospital stay; mostly those with neuro-infections. 13 (20.3%) infants had developmental delay.

Keywords: *Child; Cause; Epilepsy; Prognosis.*

A seizure is one of the commonest childhood neurological illnesses and the risk is the highest in the first year of life [1]. Even after four decades of the initial studies on etiology and outcome of first seizure in infants [1], not much information is available on this aspect from India [2,3]. This descriptive study was conducted from April 2012 to March 2013 in the Pediatrics department of a public hospital to describe the clinico-etiolgical profile and short-term outcome of first seizure in infants.

After Institutional Ethical board's clearance, consecutive infants (aged 4-52 weeks) presenting with seizures (on three pre-specified days per week) were admitted in the department and evaluated for inclusion after initial management and stabilization. A written informed consent was obtained from parents. Inclusion criteria were: history of first episode of seizure, or history of more than one seizure (within last 7 days) but not evaluated. Infants who had received any medication (other than anti-convulsants) prior to coming to the hospital, and infants with no documentation of treatment received for the seizure, were excluded. Prospective enrolment continued till a pre-decided sample size of convenience of 75 infants was achieved.

Detailed neurological history including details of each episode of seizure was obtained from the parents, primary caregiver or any additional person who had observed the seizure. Based on the history, seizure semiology was