Most studies state that 50% of all cases of CHD are detected by 1 month, 75% by 3 months and 100% by 3-4 years age [9]. This variation at CHD detection occurs due to hemodynamic alterations occurring after birth. Our study showed that about 5% of cases were detected by 1 month, majority (83.1%) by 5 years and diagnosis was delayed beyond 10 years in 11.7% of cases. The delay in diagnosis of CHD can be explained by lack of awareness, and less health facilities and pediatric cardiac care programs in India.

The nature of survey only provided us with an estimation of proportion and pattern of CHD and no conclusions can be drawn on prevalence and causality of CHD from this study. Nevertheless, this is the first survey from eastern India providing an up-to-date data on CHD, and filling some gaps in knowledge of CHD from this geographical region.

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# Antibiotic Prescription Quality in Group A β-hemolytic Streptococcal Pharyngitis

Antibiotic prescriptions in 227 patients with acute group A β-hemolytic streptococcal pharyngitis in the emergency department were studied. Antibiotic prescription was inappropriate in 42% of the cases, especially due to errors in the prescription of amoxicillin. Probably the use of low-spectrum penicillins would improve this percentage.

**Keywords:** *Amoxicillin, Prescription error, Treatment*.

Excessive use of antibiotics is one of the main factors associated with antibiotic resistance [1]. The administration of inappropriate antibiotics represents an unnecessary healthcare expense and likelihood of unwanted side effects [1-3]. Incorrect prescription of antibiotics in terms of dosage and administration is another factor related with antibiotic resistance guidelines. Spain is one of the European countries with the highest rates of antimicrobial prescription and antibiotic resistance [2]. Presently, rational use of antibiotic must be a priority and quality assessment and control are essential to detect deficient areas that are ripe for improvement [4,5]. In a review [6] of acute group A β-hemolytic streptococcal (GABHS) pharyngitis treated in our pediatric emergency department (ED) in 2008, a prescription rate of penicillin V <5% and errors in the posology of the prescribed antibiotic were evidenced [6].

Subsequently, annual sensitization sessions on antibiotic prescription were held. The aim of the study was to determine the appropriateness of the antibiotic prescribed in GABHS pharyngitis following the implementation of these measures.

Clinical records of patients for whom a rapid diagnostic test (RDT) was ordered in the ED for *Streptococcus pyogenes* in May-June 2016 were reviewed. Patients diagnosed with GABHS pharyngitis with positive RDT were included. A prescription was considered inconsistent if there was a mismatch or error with the existing ED protocol; type of antibiotic, dose, frequency of administration, and duration of treatment.

Two hundred twenty-seven cases were included. A first line antibiotic was prescribed for 217 (93.5%) patients [penicillin V for 74 (32.6%) and amoxicillin for 143 (63%)]. The prescription was consistent with legal guideline in 132 (58.1%) cases, 69 (93.2%) cases of penicillin V, 56 (39.2%) cases of amoxicillin and 7 (70%) cases of other antibiotics. The reasons for inconsistent prescription were type of antibiotic (5, 2.2%), dose (51, 22.5%), interval (72, 31.7%), and duration (33, 14.5%). Prescription consistency was significantly better ($P$=0.004) among physicians within the hospital (61.2%) than external physicians (28.6%).

The present study revealed an increase in the prescription of penicillin V administered to one-third patients with GABHS pharyngitis after introduction of sensitization sessions. The inconsistency in antibiotic prescription in the present study was similar to other studies which report prescription inconsistency between 22 and 51% [6,7]. The main reason for inconsistency in the present study was related to dosing frequency of amoxicillin advised eight hourly instead of twelve hourly as per standard guidelines [8-10]. This error may be explained by the greater familiarity with eight hourly dosing of amoxicillin for other infections [5,10]. Nevertheless, this dosing interval is not only inconsistent, but could additionally lead to lower patient adherence to treatment. The degree of consistency for the four assessed factors was high with penicillin V, unlike amoxicillin. Also, the quality of the prescription was poorer when the prescribing physician was external to the hospital. Therefore, better training of external professionals working in the ED should be a prerequisite to the optimization of antibiotic prescription.

In conclusion, this study corroborates the usefulness of observational studies in the assessment of compliance to antibiotic policy. Knowledge of the prescription and its critical analysis allows for identification and improvement in the use of the antibiotics. Antibiotic prescription was inconsistent in a significant percentage of patients with GABHS pharyngitis, mainly for amoxicillin. Given the easy guidelines for penicillin V administration and its narrow spectrum, it should be the main prescribed antibiotic for patients with GABHS pharyngitis.

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# Factors Associated with Nutritional Status of Adolescent Schoolchildren in Tripura

Among 893 adolescent school children from 31 schools, 78.9% were found to have normal body weight; prevalence of thinness and overweight were 8.1% and 13%, respectively. Compared to the National reference, 95$^{th}$ percentile value of Body Mass Index was higher; while both weight and height were lower. Literacy, economic and physical activity status were the most significant predictors influencing nutritional status.

**Keyword**: *Obesity, Ethnic, Overweight, Thinness*.

The existence of ethnic differences between different tribes of India in regards to their nutritional health is well reported [1]. Hence, in the present study, nutritional status and its correlates among both ethnic (Tripuri) and non-ethnic (Bengali) adolescent of Tripura was assessed.

Subjects (14-18 y) were selected using random numbers, from 31 different government schools of Tripura (3-4 school per district selected randomly). Only the students whose parents agreed to sign the informed consent were included in the study. Ethical clearance was obtained from Institutional Human Ethical Committee of Tripura University. A prevalence of 30% for malnutrition was taken to calculate the sample size with 95% confidence interval and absolute precision of 5% [2]. The sample size was 893. History of nutritional and socioeconomic status was obtained by questioning the parents using a pre-validated questionnaire. Weight and height were recorded. Frequent calibration of the scale was done. Subjects were grouped into thinness, overweight and normal weight categories based on CDC criteria [3]. Student t test, chi-square test, and logistic regression were applied for statistical analyses.

A total of 893 students (54.8% males) were evaluated. Prevalence of thinness, overweight and normal weight was found to be 8.1%, 12.9%, and 78.9%, respectively. Highest (14.61%) and lowest (2.07%) prevalence of thinness was seen in 14 years age group of Bengali and Tripuri male subjects, respectively. On the other hand 18 years and 14 years age group of Bengali female was found to have highest and lowest prevalence for overweight (20% and 11.2%, respectively) compared to other groups (***Table* I**). Compared to ICMR reference, 95$^{th}$ percentile value of weight and height were found to be lower and BMI was higher in both sexes of our subjects.

On multiple logistic regression analysis, only literacy status of parents, socioeconomic class, and physical activity level were found to be significantly related to being overweight or being thin (***Table* II**).

Ethnic Tripuri subjects showed equal and in many cases better physical characteristics compared to non-ethnic Bengali subjects, which contradicts the findings from other studies [4,5]. Another significant observation of the study was a non-significant urban and rural difference in nutritional status of adolescents from both the communities of Tripura [6]. Overall prevalence of thinness found in study was much lesser than the prevalence reported from other Indian studies [7]. Similar to our findings, previous studies reported that early adolescence was more vulnerable period for malnutrition [8].

**TABLE I Association Between Nutritional Status and Socio-Demographic Status (*N*=893)**

| *Demographic factors* | *% No.(%)* | *Nutritional status(%)* | |
|---|---|---|---|
| | | *Thinness* | *Overweight* |
| Female gender | 404 (45.24) | 8.66 | 12.87 |
| *Community* | | | |
| Tripuri | 530 (59.35) | 6.72 | 12.86 |
| Bengali | 363 (40.65) | 9.95 | 13.17 |
| *Study area* | | | |
| Rural | 419 (46.92) | 9.07 | 12.17 |
| Urban | 474 (53.08) | 7.17 | 13.71 |
| *Age group* | | | |
| 14 y | 398 (44.57) | 6.78 | 12.06 |
| 15 y | 223 (24.97) | 7.62 | 13.01 |
| 16 y | 118 (13.21) | 9.32 | 13.56 |
| 17 y | 90 (10.08) | 11.11 | 14.44 |
| 18 y | 64 (7.17) | 10.94 | 15.62 |