# Morbidity Profile of Adolescents Admitted in a General Pediatric Ward

We studied the morbidity pattern of inpatient adolescents over a period of 17 months. Of 32115 admissions in this period, 2742 were adolescents (39.7% females). 93.9% were partially immunized, 37.3% were malnourished, 2.8% were overweight and 56% were anemic. Dengue and dengue-like illness (528) were the most common illness.

**Keywords**: *Disease, Outcome, Teenagers, Young people.*

Adolescents make-up 18% of the world's population [1]. Adolescence and young adulthood coincide with major changes in health problems [2,3] and emergence of risk behaviors [4]. Yet extensive review of literature has revealed scarce data on the morbidity pattern of adolescent patients in India. Thus we conducted this study of demographic and morbidity profile of adolescents admitted in pediatric wards.

This prospective study was conducted in the inpatient general Pediatrics ward of Kalawati Saran Children's Hospital, Lady Hardinge Medical College (LHMC) for a period of 17 months. All adolescents (10-18yrs) admitted for at least 48 hours were included in the study. Patients in ICU or shifted from the ICU, those with intellectual disability, and those who left against medical advice were excluded. A structured form was used containing demographic data like age, sex, educational status of the patient and their parents, family income, nutritional status, hemoglobin levels, immunisation status and diagnosis at discharge to assess the morbidity profile. For assessing anemia and nutritional status, respective age-matched WHO data were used [5, 6]

Of the total 32115 admissions, 2742 were adolescents (39.7% females). 68.8% were aged between 10 and 13 years (early adolescence), and 28.6% between 14 and 16 years (mid adolescence). Among females, 14.0% were uneducated, 38.8% received primary education and 47.2% received secondary education. Whereas among males, these rates were 10.9% 45.8% and 43.3%, respectively. Immunization status showed that only 6.0% of the patients were immunised for age, and 11.4% were not imunised. 56.0% of the patients were anemic, 37.3% were thin whereas 2.8% were overweight. System-wise distributions of the diseases (***Table*** I) shows the bulk of diseases as infectious. Dengue and dengue-like illness were the commonest diagnosis.

In this study, a higher proportion of male admissions (60.2 %) were noted probably due to social reasons. 56% of the patients were found to be anaemic which is considerably higher than previous figure [7,8], probably a Berkesonian bias. 37.3% of the patients were found to be undernourished, at par with most other studies [7,8]. Systemic infections was the commonest cause of admission (33.6%) in contrast to Sachdeva, *et al*.[9], where the commonest cause of admission was injury, poisonings, burns and accidents followed by pregnancy (13.9%), but consistent with findings of Ojukwu, *et al*. [10]. This difference is probably related to the sources of data (only pediatrics ward in our study as compared to different wards in the study by Sachdeva, *et al*. Overall hospital morbidity in this study, like others from developing countries, is infectious in origin, which is in sharp contrast to with the developed countries with non-infectious causes including substance abuse, depression, obesity forming the bulk [4]. Being a hospital-based data our findings cannot be extrapolated to the general population, but in absence of any baseline data it can be close approximation to the overall morbidity pattern.

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**TABLE I** DISEASE SPECTRUM OF ADOLESCENTS (*N*=2742)

| Disease | No. | Disease | No. |
|---|---|---|---|
| *CNS Disorders (11.7%)* | (11.74%) | Pancreatitis | 16 |
| Meningitis and meningoencephalitis | 142 | Portal hypertension and EHPVO | 16 |
| Inflammatory granuloma | 56 | Acute gastritis | 44 |
| Others (demyelinating disorders, phenytoin toxicity, | | Pain abdomen under evaluation | 36 |
| cerebellar disorders, neuropathy etc) | 34 | Acute gastroenteritis | 64 |
| Epilepsy | 90 | Celiac disease | 24 |
| | | Others (other malabsorption syndromes, dysphagia etc) | 62 |
| *CVS Disorders (1.2%)* | | | |
| Congenital heart disease | 14 | *Endocrine Disorders (2.4%)* | |
| Rheumatic heart disease | 8 | Diabetes mellitus | 49 |
| Dilated cardiomyopathy | 5 | Hypocalcaemia and hypoparathyroidism | 10 |
| Others | 6 | Hypothyroidism | 2 |
| | | Others | 6 |
| *Respiratory Disorders (12.5%)* | | | |
| Pleural effusion | 90 | *Renal Disorders (7.2%)* | |
| Bronchial asthma | 86 | Nephrotic syndrome | 120 |
| Pneumonia | 40 | Post-streptococcal glomerulonephritis and nephritic | |
| Others (interstitial lung disease, bronchiectasis, | | syndrome | 29 |
| pulmonary eosinophilia etc | 40 | Chronic kidney disease | 24 |
| | | Others (hemolytic uremic syndrome, renal tubular | |
| *Infections (33.7%)* | | acidosis etc) | 23 |
| Dengue( probable and confirmed) | 528 | | |
| Malaria | 136 | *Hematological Disorders (12.1%)* | |
| Enteric fever | 95 | Nutritional anaemia | 82 |
| HIV/AIDS | 40 | Thalassemia major | 10 |
| Tuberculosis (pulmonary, abdominal and disseminated) | 186 | Haemolytic anemia | 32 |
| Pyrexia of Unknown Origin | 48 | Aplastic anaemia | 60 |
| Others (rickettsia, leptospira, nonspecific viral illness) | 38 | Leukemia and lymphoma | 67 |
| | | Chronic ITP | 24 |
| *Musculoskeletal (1.3%)* | | Haemophilia | 16 |
| | | Others (sickle cell disease etc) | 41 |
| *GI Disorders (16.1%)* | | Haemophilia | 16 |
| Chronic liver disease | 60 | | |
| Acute hepatitis | 30 | *Miscellaneous (1.75%)* | |
| Liver abscess | 30 | | |

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