

**Economic Load of Secondary prophylaxis with Penicillin on Families of Rheumatic Heart Disease Patients: Results from a Pediatric RHD Registry in India**

Saxena A., Ramakrishnan S.

*Department of Cardiology, All India Institute of Medical Sciences, New Delhi, India*

**Introduction:** Rheumatic heart disease (RHD) continues to be a public health problem in developing countries. Secondary prophylaxis with long acting penicillin (Benzathine penicillin G or BPG) injections is the most cost effective method of prevention and control. However poor adherence to BPG has been reported from most high prevalence regions. Inability to afford the treatment may be a contributor to poor adherence rates.

**Objective:** To study the out of pocket cost of secondary prophylaxis with BPG in pediatric RHD patients.

**Methods:** We prospectively collected self reported data from the parents of RHD children recruited in the hospital based Pediatric RHD Registry. The data included out of pocket expenses on the drug (BPG), on the transportation to the health facility for injection, and the cost of the provider, for administering injection. For patients interviewed on multiple visits, the mean of all values was calculated. We derived monthly estimates of all three categories of costs by adjusting visit costs for frequency of administration. All costs were reported in Indian Rupee (INR) and are converted into Euro (EUR).

**Results:** The cost data was provided by 547 patients over 1642 visits. The mean age  $11.97 \pm 3.17$  years, 354 (64.7%) were boys. Most patients were from rural areas (91.8%) and from lower and lower/upper lower socio-economic strata on the modified Kuppuswami socio-economic scale (65.6%). The total monthly out of pocket cost of penicillin prophylaxis was INR  $60.6 \pm 101.5$  (EUR  $0.75 \pm 1.25$ ). The drug cost (INR  $20 \pm 8.46$ ; EUR  $0.23 \pm 0.10$ ) represented only 31.3% of the total out of pocket cost. Parents spent 44.7% of the total cost on transportation to the health facility and the remainder (23.9%) was spent on administration of the injection (INR  $14.5 \pm 27.6$ ; EUR  $0.18 \pm 0.34$ ). The costs of injection provider and the transportation to the health facility exceeded the cost of the drug for 29.6% of the patients.

**Conclusions:** More than two third of the total economic load of penicillin prophylaxis is constituted by transportation and provider costs. This can be a major barrier to long-term adherence to secondary prophylaxis. Future efforts must be directed at improving access and lowering total cost of secondary prophylaxis.