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Accuracy of referral hospital data to calculate the incident rate of Paracetamol poisoning in Sri Lanka

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Objective: Paracetamol admissions in Sri Lanka have been increasing in urban hospitals. The use has not been quantitated in rural areas. Increasing use in rural areas may impact on resource utilisation and public health. Official government statistics lump poisoning by drugs, medicaments and biological substances together and there is no mention of paracetamol as a separate entity. This study was to identify the hospital admission data set that best captures the incidence of acute paracetamol poisoning.

Methods: A prospective study was carried out using the cohort data base maintained by South Asian Clinical Toxicology Research Collaboration. Data was collected on all paracetamol poisoned patients who were 12 years of age or older and who were admitted to all hospitals where inpatient facility was available in three districts which include 13 primary and 1 referral hospital in Matara, 44 primary and 1 referral hospital in Kurunegala and 20 primary hospitals and 1 referral hospital in Galle from 31 August 2011 to 31 August 2013. Two admission data sets were compared with incidence rate calculated by adding all direct admissions to primary care hospitals and to the relevant referral hospital with total admissions to the referral hospital only (both direct and referrals). The government census data of 2012 was taken to calculate the incident rate.

Results: When both primary hospital data and referral hospital data were taken, overall age and sex adjusted annual incidence of paracetamol poisoning among population was 64 (CI 60-68), 51 (CI 46-57) and 68 (CI 63-74) per 100,000 population/per year in Kurunegala, Matara and Galle districts respectively. When only the referral hospital data was taken, annual incidence rates were 31 (CI 28-34), 39 (CI 34-44) and 40 (CI 36-45) per 100,000 population/per year. The referral hospital data has underestimated the incidence of acute poisoning by 52%, 24% and 41% in all the three districts. The reasons for those are the geography and transfer distance and capacity to treat in primary hospitals.

Kurunegala district is located giving more access to other referral hospitals in surrounding districts while Matara is not. When considering primary hospital data, Matara (21%) and Galle (19%) districts had fewer transfers compared to Kurunegala (41%) showing more capacity to treat with in the primary hospital itself.

Conclusion: Admission data from referral hospitals don't provide accurate paracetamol poisoning prevalence data, because the patients are not all referred. The issues of referral distances could be a possible reason for the variation in referral hospital rates.