Abstract

Introduction

Oral Paediatric Anti-Infective Medicines (OPAIM) access consists of physical, financial, and socio-cultural components. Errors in preparation, storage, and disposal of OPAIMs can result in undesirable outcomes among children.

Objectives

To assess the physical, socio-cultural, and financial access of OPAIMs and the knowledge, practices and associated factors on preparation, storage, and disposal of OPAIMs in acute minor illnesses among primary caregivers of 3–5-year-old children in Ratnapura District, Sri Lanka.

Methods

Eleven essential OPAIMs were selected to assess the physical and financial access. Using a checklist on essential OPAIMs, availability was assessed among 28 each private and public outpatient pharmacies selected by simple random sampling. Lot Quality Assurance Sampling (LQAS) was used for the analysis of satisfactory availability of each selected OPAIM. Using the same checklist on essential OPAIMs, geographical access was assessed by mapping all registered private and public pharmacies in three Medical Officer of Health (MOH) areas using ArcGIS. Three types of maps developed using road network, population density and interpolated access using availability of OPAIMs. The prices of Originator Brand (OB) and Lowest Priced Generic (LPG) of OPAIMs from 30 private and 2 Osu-Sala pharmacies was obtained using WHO/HAI medicinal price methodology. Availability and Median Price Ratios (MPR) of OB and LPG of OPAIMs, Mean Percent Difference and affordability of standard treatment with a OPAIM were assessed. Nine Focus Group Discussions (FGD) with primary caregivers were conducted to assess socio-cultural access to OPAIMs. Dispenser practices of issuing a OPAIM suspension was assessed by concealed participation observation technique. A cross-sectional study was carried out among 820 primary caregivers selected using two stage cluster sampling at field clinics to assess the knowledge and practices on preparation, storage, and disposal of OPAIMs. Live demonstration of

reconstitution of OPAIM suspension was assessed by a checklist. Knowledge on storage and disposal of OPAIMs was assessed using interviewer administered questionnaire. Associated factors with caregiver knowledge and practices on preparation, storage and disposal were assessed using Chi-square and logistic regression.

Results

Metronidazole (3.6% vs. 53.6%), Pyrantel (17.9% vs 96.4%), Amoxicillin and Clavulanate (10.7% vs 85.7%), and Acyclovir (10.7% vs. 75%) reported the lowest availability in public sector compared to private sector. Satisfactory availability was reported in three and nine out of eleven OPAIMs in public and private sector respectively. Communities residing in "Western" MOH areas bordering Colombo District demonstrated better access for private sector to the anti-bacterial group of drugs whereas poorest access could be expected among communities in "Eastern" MOH areas of the district. Erythromycin and Albendazole displayed less than 50% availability for Generic product in private pharmacies. Three out of five of OBs and three out of nine LPGs of OPAIMs were expensive. Standard treatment with all available LPGs of the selected OPAIMs was affordable.

Previous experience in treating their children for similar illnesses, overall cost of seeking treatment, influence of close community on use of OPAIMs for a child with acute illness and caregiver perception on effectiveness of OPAIMs in reducing symptoms of acute mild illnesses were the key themes on socio-cultural access.

"Self-medication of the children with OPAIMs" was reported by 11.8% of caregivers. Overall, 46.3% displayed good performance in demonstration of preparation of OPAIM suspension. Not having an elder sibling for the child (AOR=0.472, 95% CI: 0.306-0.728), caregiver being old (AOR=0.442, 95% CI: 0.284-0.690), male (AOR=0.218, 95% CI: 0.090-0.525), Tamil (AOR=0.329, 95% CI: 0.142-0.763), and living in urban sector (AOR=0.374, 95% CI: 0.228-0.616) was negatively associated with good or average practice of preparation of OPAIM suspensions. Only one respondent (0.1%) had good knowledge on storage of OPAIMs. Only 24 (2.9%) had good knowledge on disposal of OPAIMs. Educated up to Grade 6 to 10 (AOR=0.332, 95% CI: 0.114-0.965) was negatively associated with good or average knowledge on disposal of OPAIMs.

Conclusions and Recommendations

Poor availability of OPAIMs was reported in government sector compared to private sector. Misconceptions among primary caregivers on primary care institutions and private pharmacies prevent them from accessing OPAIMs close to their residencies. Poor knowledge on storage and disposal of OPAIMs were observed among primary caregivers. Distribution of infographic leaflets with instructions on reconstitution, storage, and disposal instructions in local languages is important when dispensing medicines.