World Academy of Science, Engineering and Technology
International Journal of Medical and Health Sciences
Vol:18, No:09, 2024

Pediatric Drug Resistance Tuberculosis Pattern, Side Effect Profile and Treatment Outcome: North India Experience

Authors : Sarika Gupta, Harshika Khanna, Ajay K Verma, Surya Kant

Abstract : Background: Drug-resistant tuberculosis (DR-TB) is a growing health challenge to global TB control efforts. Pediatric DR-TB is one of the neglected infectious diseases. In our previously published report, we have notified an increased prevalence of DR-TB in the pediatric population at a tertiary health care centre in North India which was estimated as 17.4%, 15.1%, 18.4%, and 20.3% in (%) in the year 2018, 2019, 2020, and 2021. Limited evidence exists about a pattern of drug resistance, side effect profile and programmatic outcomes of Paediatric DR-TB treatment. Therefore, this study was done to find out the pattern of resistance, side effect profile and treatment outcome. Methodology: This was a prospective cohort study conducted at the nodal drug-resistant tuberculosis centre of a tertiary care hospital in North India from January 2021 to December 2022. Subjects included children aged between 0-18 years of age with a diagnosis of DR-TB, on the basis of GeneXpert (rifampicin [RIF] resistance detected), line probe assay and drug sensitivity testing (DST) of M. tuberculosis (MTB) grown on a culture of body fluids. Children were classified as monoresistant TB, polyresistant TB (resistance to more than 1 first-line anti-TB drug, other than both INH and RIF), MDR-TB, pre-XDR-TB and XDR-TB, as per the WHO classification. All the patients were prescribed DR TB treatment as per the standard guidelines, either shorter oral DR-TB regimen or a longer all-oral MDR/XDR-TB regimen (age below five years needed modification). All the patients were followed up for side effects of treatment once per month. The patient outcomes were categorized as good outcomes if they had completed treatment and cured or were improving during the course of treatment, while bad outcomes included death or not improving during the course of treatment. Results: Of the 50 pediatric patients included in the study, 34 were females (66.7%) and 16 were male (31.4%). Around 33 patients (64.7%) were suffering from pulmonary TB, while 17 (33.3%) were suffering from extrapulmonary TB. The proportions of monoresistant TB, polyresistant TB, MDR-TB, pre-XDR-TB and XDR-TB were 2.0%, 0%, 50.0%, 30.0% and 18.0%, respectively. Good outcome was reported in 40 patients (80.0%). The 10 bad outcomes were 7 deaths (14%) and 3 (6.0%) children who were not improving. Adverse events (single or multiple) were reported in all the patients, most of which were mild in nature. The most common adverse events were metallic taste 16(31.4%), rash and allergic reaction 15(29.4%), nausea and vomiting 13(26.0%), arthralgia 11 (21.6%) and alopecia 11 (21.6%). Serious adverse event of QTc prolongation was reported in 4 cases (7.8%), but neither arrhythmias nor symptomatic cardiac side effects occurred. Vestibular toxicity was reported in 2(3.9%), and psychotic symptoms in 4(7.8%). Hepatotoxicity, hypothyroidism, peripheral neuropathy, gynaecomastia, and amenorrhea were reported in 2 (4.0%), 4 (7.8%), 2 (3.9%), 1(2.0%), and 2 (3.9%) respectively. None of the drugs needed to be withdrawn due to uncontrolled adverse events. Conclusion: Paediatric DR TB treatment achieved favorable outcomes in a large proportion of children. DR TB treatment regimen drugs were overall well tolerated in this cohort.

Keywords : pediatric, drug-resistant, tuberculosis, adverse events, treatment
Conference Title : ICPP 2024 : International Conference on Pediatric Pulmonology
Conference Location : Toronto, Canada
Conference Dates : September 19-20, 2024