Typhoid Fever – Will we able to control this in Pakistan?

Salmonella typhi and *Salmonella paratyphi* causes typhoid fever and this is endemic in Pakistan. Every year there is consistency in cases reported across Pakistan. More than 20,000 cases were reported during 2017-2019 period.[1] Disease is associated with increasing morbidity and mortality. It is transmitted through oral-fecal route. Hand hygiene, water sanitation and good control on sewage practices can prevent its transmission from person to person. The disease fever lasts a little long compared to other pathogenic bacterial illnesses and mainly affects gastrointestinal and hepatic system of the body affecting appetite and linear growth of the affected person even post-cure. Cephalosporins were the treatment of choice in the past, however in last two years there is an increasing resistance reported across Pakistan. A new classification of non-resistant typhoid fever, multi-drug resistant (MDR) typhoid fever and extensive drug resistant (XDR) typhoid fever was established in 2018. XDR typhoid fever is sensitive against azithromycin and carbapenems; and currently are drug of choice in MDR typhoid.[2]

The presence of XDR Salmonella typhi in Pakistan is mainly due to poor WASH (water, sanitation and hygiene) practices across the country. Despite the endemicity there wasn't any approved official typhoid vaccination in EPI Pakistan till 2018. After the outbreak a conjugate typhoid vaccine (TCV) is licensed and given across the high-risk areas of the Sindh and Pakistan. Pakistan is the first country to introduce TCV in routine immunization program in November 2019.[3] The TCV was found to be effective and safe. There weren't any adverse events following immunization (AEFI) during vaccination campaign for children aged 6 months to 10-year-old in Hyderabad.[4] The potential strategies to control this disease in Pakistan is high level political commitment on water sanitation and sewage control. The Water and Sewage authority (SAWA) must put all the efforts to work on old line and seepage from lines, ensure the vacuum pumps are functional and there is no contamination of drinking water supply with sewage water. The commitment is crucial and require a lot of sustainability plan. There is also a need on control and check on drinking water supply across the country. The cane water is supplied across the cities without a government permit and audit. This may prevent a future outbreak. Community awareness sessions and educational activities on the outbreak and prevention strategies in continuous basis are needed. These require intervention and education particularly targeted around hygiene, water sanitation, boiling of drinking water, a complete and thorough washing of raw vegetables and fruits, and the risks of eating out from street vendors. Local/district and provincial stakeholders can play an integral and pivotal role in the execution. A public-private partnership is also essential to help a continuous engagement of all team members.

There has to a periodic check and bacterial culture or running polymerase chain testing particularly of water transmission pathogen on the clean line water supply. All drinking water should be check for its drinkability and should have chlorine as per Pakistan law.

As, the TCV is now the part of routine EPI. The availability and accessibility is not a major question but all children should receive it. Our routine immunization is lowest among our neighboring countries and in Eastern Mediterranean region. There are provincial, gender, urban and rural disparities. This need urgent actions.

In conclusion, TCV availability in Pakistan is a major success of public-private partnership in pediatric health care. Vaccine is one component in control. Other major component including WASH and water and sewage treatment need urgent and comprehensive monitoring and planning.

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