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Field Epidemiology & Disease Surveillance Division

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National Focal Point for International Health Regulations

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Subject: Advisory for Prevention and Treatment of Typhoid Fever

Increased number of typhoid fever cases in the country and isolation of extensively drug resistant (XDR) *Salmonella enterica serovar* Typhi in Hyderabad and other areas of Sindh are continuously reported. These XDR cases are resistant to the first-line treatment like chloramphenicol, ampicillin, trimethoprim-sulfamethoxazole, fluoroquinolones, and third generation cephalosporins. This is a public health concerning situation and demands immediate necessary measures to curtail further transmission and initiate timely and prompt treatment. The objective of this advisory is to sensitize health authorities to take in-time and appropriate actions for preparedness and prevention of typhoid fever.

Case Definition:

Suspected Case: Any person with acute illness and fever of at-least 38°C for 3 or more days with abdominal symptoms like diarrhea, constipation, abdominal pain/ discomfort and prostration.

Probable Case: A suspected case with a positive sero-diagnosis but no *S. Typhi* isolated **or** a clinical compatible case that is epidemiologically linked to a confirmed case in an outbreak.

Confirmed Case: A suspected/ probable case that is laboratory confirmed by isolation of *S. typhi* from blood/ stool or urine.

Mode of Transmission:

Typhoid infection occurs through feco-oral route and spreads through contaminated food, milk, frozen fruits and water or through close contact with already infected persons. The contamination of food and water usually occurs due to poor sanitation and mixing of sewerage with drinking water.

Incubation period depends on the inoculum size and host factors; 3 days to >60 days with a usual range of 8 to 14 days. Pre-school children are at greater risk of developing disease and usually have milder symptoms than the adults. Travelers or workers in endemic areas and care-givers of the patient infected with *Salmonella* Typhi are also at higher risk.

Diagnosis:

- *S. Typhi* can be isolated from blood during the first week of illness or from stool and urine after the first week of illness.
- Widal and Typhidot have little diagnostic value due to limited sensitivity and specificity.

Treatment: Patients having history compatible with case definition(s) should immediately report to the hospital. Sample should be collected for culture & sensitivity before starting the empirical therapy. To limit the antimicrobial resistance (AMR), antibiotics should be prescribed after the results of culture and sensitivity test. Unnecessary use of antimicrobial agents should be discouraged to treat the patients presenting with fever. The XDR culture report must be communicated to the concerned district health authorities and the NIH.

Preventive measures and Vaccination:

It is suggested that with the treatment options for typhoid becoming more limited, following preventive measures are urgently needed, including improved sanitation and vaccination campaigns:

- Thorough hand washing with soap and water is highly recommended after using toilet, before and after attending patient, before handling, cooking and eating.
- Drink treated, boiled or bottled water. Use ice, prepared from clean drinking water preferably boiled. Wash fruits and vegetable properly before eating. Eat freshly cooked, hot served and home-made food.
- Avoid eating raw fruits or vegetables, market prepared or leftover food. Use pasteurized milk.
- Vaccination should be considered especially for those who are travelling to and from endemic areas, high risk group of people and those who are exposed to the disease. Typhoid fever vaccines do not provide 100% protection however they will reduce the severity of the illness.
- Typhoid conjugate vaccine (Typhar-TCV®) is a new conjugate vaccine with longer immunity. WHO has prequalified the first conjugate vaccine in December 2017 to prevent typhoid fever.

Laboratory Diagnosis and NIH Support:

- Lab tests for typhoid fever should be recommended to those who fulfill criteria of suspected case definition available at NIH website (www.nih.org.pk).
- For any further assistance in this context, the Field Epidemiology & Disease Surveillance Division (FE&DSD) (051 – 9255237 and Fax No. 051-9255575) and Public Health Laboratories Division (051-9255082), NIH may be contacted.

The above 'Advisory' may please be circulated widely to all concerned.


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