

Prevention of Leptospirosis in flood affected areas: Practical tips based on review of existing guidelines

(Based on expert group discussion held on 21-8-2018 at School of Health policy studies (KUHS), Trivandrum)

Background: There is significant chance for a person exposed to flood affected area to develop leptospirosis. Leptospirosis, popularly called rat fever is a zoonotic disease from rats or other animals to man. As the clinical features are overlapping with other conditions clinical diagnosis is not confirmatory, but is enough for initiating treatment. **Mucosal exposure while bathing in contaminated water or skin contact with surface water or moist soil are the principal means of transmission.** As there is significantly high case fatality, early initiation of treatment is important. Kerala is endemic for leptospirosis and since year 2000, frequent outbreaks have been reported.

For prevention following tips are advised

- 1. Personal protection:** Even if one takes chemoprophylaxis, adherence to personal protective measures is important especially while **cleaning the houses and surroundings.**
- 2.** Take maximum precautions for skin care, be careful for avoidance of risky exposure, use **hand gloves and** appropriate foot wears. Use only safe drinking water. Recommended water purification methods for drinking water are boiling/chlorination/filtering. The surface water can be cleaned using bleaching powder after manual removal of waste or sludge. Spreading bleaching powder on waste material is not correct and to be done only after removal of waste material.
- 3. Environmental risk reduction:** Risk factors for leptospirosis include polluted water, water logging, animal population in habitat, and geo-climatic factors like continuing rainfall, less salinity, alkaline pH etc. Waste management including that of carcass and excreta disposal are equally important. Throwing left over food to surroundings will increase rat population and leftover food need to be handled through appropriate garbage treatment methods. **Rodent control is important and if one gives history of seeing rat during the previous one week in the habitat, steps should be intensified for rat control. The indiscriminate use of pesticides has already done damage to nature and whenever possible it is preferable to rely mainly on rat traps than rodenticide (ZnP) in the current situation.**
- 4. Disease reporting.** Disease reporting needs to be made complete and hence all cases with fever need to be sought for medical help. Though fever of three days duration is the criteria for diagnosis, all fever cases need to be reported to medical persons because fever can be also due to other infections. People may neglect the fever because of false feeling of protection they expect from consumption of doxycycline . No drug is cent per cent effective and hence all fever need to be medically assessed.

- 5. Use of lab tests:** Laboratory investigations are to be ordered and interpreted by doctors managing the patients. There are different levels of investigations and testing without seeing a doctor can create unnecessary confusions and damage. So also is interpreting the test results. During the early phase of disease tests are not positive and treatment need to be started on clinical basis alone.
- 6. Referral:** Vital organ involvement and failure is the important complication and a common cause of fatality. Even with meticulous clinical monitoring this may be unpredictable in few cases and management in higher centres may be necessary. Delay in management should be avoided for saving life and if referred patient should be transferred without delay. Supportive treatment during initial phase can save life and hence the instructions from doctors need to be complied during transport also.
- 7. Chemoprophylaxis:** There are many concerns expressed in social media about 'doxy prophylaxis'. Though universal pre-exposure prophylaxis is not generally recommended considering the risk of infection in disastrous flood situation, pre-exposure prophylaxis for all those who have a definite chance of exposure can be recommended. The conventional grading of exposure levels and evidence based levels of recommendation should be considered in the context of unimaginable risk of transmission in water-logged area where constant water contact makes legs wet and sodden, so that history of crack or break in skin becomes irrelevant. The risk of adverse events should be informed and mitigated by avoiding drug use among children less than eight years, pregnant, or on empty stomach, and subjects with previous history of allergy or photosensitivity. Those who are taking concomitant medications like antiepileptic drugs, cardiovascular medications or oral contraceptives also need to consult their doctor and then only to take doxycycline. As there is possibility of side effects, those having headache, stomach upset, skin problems, blurry vision, urine colour change after taking doxycycline need to report to their doctor.