

Effectiveness of Antibiotic Prophylaxis for Leptospirosis among Adults: A Systematic Review

ABSTRACT

Leptospirosis is one of the most widespread re-emerging zoonoses in the world. Malaysia is known to be an endemic country for human leptospirosis, with a case fatality rate of 2.11%, and an average annual incidence rate of 7.80 cases per 100,000 individuals. This systematic review is conducted to determine the effectiveness of antibiotic prophylaxis for leptospirosis among the adult populations who are highly at risk of getting infected. A systematic search was performed for the relevant titles, abstracts and keywords on PubMed, Scopus, Cochrane and Google Scholar from inception to November 2017 based on the PICO strategy; which returned 126 studies. Screening of abstracts had shortlisted 19 studies and data extraction was conducted for 8 studies which had been accepted after review of the full text. For the evaluation of antibiotics prophylaxis effectiveness against leptospirosis, only trials and cohort studies with risk ratio (RR) were selected. The articles were analyzed from the viewpoint of the dosage, adverse effects, study settings and effectiveness of the antibiotic prophylaxis. Using fixed effects model, pooled RR showed protective association between antibiotic prophylaxis use against the incidence of leptospirosis (RR = 0.31; 95% CI: 0.20, 0.48). Antibiotic prophylaxis for leptospirosis had been shown to be effective in preventing the incidence of the disease among high-risk populations and carries minimal adverse effects. It is recommended that the practice of antibiotic prophylaxis for leptospirosis is included in the standard protocol for leptospirosis prevention among people at high-risk, including disaster response teams and patrons of eco-sports tourism activities; with the drug of choice being doxycycline, either as a single 200 mg dose or weekly dose of 200 mg for the duration of exposure, based on the setting, duration of event and resources available.