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C-reactive protein point-of-care testing and antibiotic prescribing for acute respiratory tract infections in rural primary health centers of Ethiopia

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Unjustified antibiotic prescribing for acute upper respiratory infections (URTIs) is probably more common in poor-resource settings where physicians are scarce. Introducing easy tools to help identify infections requiring antibiotics is imperative. Use of C-reactive-protein (CRP) point-of-care testing—an inflammatory indicator, could be a competitive tool for this purpose. Clinical trials in developed countries show effectiveness of CRP, prepared as point-of-care testing, to identify patients requiring immediate antibiotics, pending or don't need any. However, evidence about level of improper antibiotics prescribing and distribution of CRP in patients with URTIs in poor-resource settings is not yet studied, which will justify for introducing the CPR point-of-care testing. Our study pointed out the magnitude of antibiotics prescribing and distribution of CRP levels among the patients with URTIs in primary health care units in Ethiopia. We included 414 patients with acute URTIs from four health centers. Health professionals recorded the clinical features of the patients but laboratory technicians measured the CRP levels of the patients at the point of cares. The most prominent respiratory causes for consultation were acute URTIs combined (44.4%), and lower respiratory tract infections— pneumonia (29.71%) and acute bronchitis (25.84%). The CRP distribution was less than 20 mg/l, 20-99 mg/l and 100 mg/l or more in 66.6%, 27.9% and 5.5% of the patients, respectively. These levels were significantly different among the clinical diagnoses ($X^2=114.3$, $p<0.001$, $df=4$). A wide range of antibiotics was administered for 87.8% of the patients, regardless of the diagnosis or prognostic nature of their diseases. In sum, antibiotic prescribing for acute URTIs in the rural areas of Ethiopia is unduly high, with high proportions of mild, self-limiting illness, mostly URTIs. Implementation of CRP point-of-care testing in such resource-constrained settings could help low or middle health professionals identify patients who benefit from antibiotic treatment.

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