Active case-finding of tuberculosis in general populations and at-risk groups: a systematic review and meta-analysis

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Abstract

Background The World Health Organization (WHO) recommends active case-finding (ACF) of tuberculosis (TB) in certain high-risk groups; however, more evidence is needed to elucidate the scope of ACF beyond the current recommendations. In this study we aimed to systematically review yields (the prevalence of active TB) of studies on ACF in general populations and at-risk groups.

Methods A literature search in PubMed, Embase and the Cochrane Central Library (CENTRAL) was performed for studies concluded after 31 December 1999 and published before 1 September 2020. Screening yields were estimated and yield/prevalence ratios (ratio between yield of study and WHO estimated prevalence of TB) were calculated to assess which groups might especially benefit from ACF. Finally, risk of bias was assessed and heterogeneity was investigated using meta-regression and sensitivity analyses.

Results We included 197 studies, with a total of 12 372 530 screened and 53 158 cases found. Yields were high among drug users, close contacts, the poor and marginalised, people living with HIV, and prison inmates across incidence strata, and estimated yield/prevalence ratios in screenings of general populations tended to be >1 with an overall ratio of 1.4 and ranging between 1.0 and 1.5. Sensitivity analyses suggested that inclusion of studies at high risk of bias contributed to underestimation of yields.

Conclusion Despite many studies using insensitive screening methods, these results suggest that more at-risk groups should be considered for inclusion in future screening recommendations and that screening of general populations may outperform current case-finding practices, providing evidence for extending ACF beyond the current recommendations.