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Title: Contact screening in tuberculosis. Can we identify those with higher risk?

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Body: Introduction: Contact tracing is part of the tuberculosis (TB) elimination strategy. It is important to know which risk factors are associated with a positive screening. Objectives: To identify risk factors associated with a positive screening. Material and methods: During 2011, contacts of patients with pulmonary TB (sputum or broncho-alveolar lavage smear or culture positive), followed for screening in a TB reference centre, were questioned about their exposure to the index case. Positive screening was defined as active TB or latent infection. Contacts with incomplete characterization of exposure, unfinished screening or a past history of TB were excluded. A binary logistic model was used to analyze the variables. Results: We observed 509 contacts of which 359 (153 men, median age: 32 years) were included in the analysis. 76 had a positive screening. Positive screening was associated with a positive sputum analysis of the index case (OR=2.62, 95%CI=1.33-5.14) and with coinhabitation (OR=3.42, 95%CI=1.66-7.07). Each additional year in age of the contact implied an increase in the odds for infection of 3% (OR=1.03, 95%CI=1.02-1.05) and each additional day of symptoms by the index case, previous to treatment, implied an increase in the odds for infection among his contacts of 1% (OR=1.01, 95%CI=1.00-1.02). No significant differences were found regarding size and ventilation of the exposure site. Conclusions: This study shows that there is a significant increase in the risk of TB transmission to contacts for every day that the diagnosis of the index case is delayed. Increased risk was also shown for coinhabitants, contacts of older age and the presence of positive sputum smear or culture of the index case.