Risk factors of MDR TB: a case control study in selective DOTS Plus Clinics in Nepal

Objective: To identify the risk factors for MDR TB among people with MDR TB registered in National TB control programme at selected DOTS plus clinics in Nepal.

Methods and materials: This study was institution based unmatched case control study; conducted in DOTS plus centre at Kathmandu valley and Pokhara. Cases were MDR TB cases registered and taking treatment in national TB control programme while controls were the smear positive TB cases registered in the programme and taking medicine from the respective DOTS centres. Estimated sample size for the study was 345 (115 cases and 230 controls), calculated through Stat calc of Epi Info. Pretested structured interview schedule was used to collect the information. Data was entered in MS excel and analyzed in SPSS 17.0 for windows. Chi-square test was used to analyse the statistical significance of the difference in the amount of exposure and odds ratio (OR) was used to estimate the magnitude the association.

Findings: More than a quarter of the respondents were engaged in job or private business (28.1% and 27.6% respectively in cases and controls). Likewise, almost similar proportion was daily wage labourer and students. Nearly, half of the cases (48.2%) worked more than eight hours a day as compared to 34.2% among the controls. Wealth categorization showed somehow proportional division of the cases and controls in five categories. Bi-variate analysis of several exposure variables with MDR TB identified following variables to be statistically associated with MDR TB: low wealth category, more than 8 hours work per day, smoking, alcohol consumption, passive smoking, firewood as a cooking fuel, past TB, travel outside the country, co-morbidity. In the multi-variate analysis; three exposure variables namely smoking (OR=2.085, CI: 1.040-4.181), passive smoking (OR=2.790, CI: 1.452-5.359) and past TB (OR=14.937, CI: 7.931-28.133) were found to be independent risk factors of MDR TB after adjusting for other variables.

Conclusion: Effective management of TB cases and smoking cessation are the key to the control of MDR TB based on this study results. From the design perspective, it demands further studies to assess more precisely the role of duration, quality and quantity of smoking and its association with MDR TB.