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Title: Risk of TB infection and smoking: IFN- γ concentration increases with the cigarettes' number in smokers

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Body: Aims: Active and passive exposure to tobacco smoke are risk factors for TB infection, evidenced previously using Tuberculin Skin Test. We aim to determine the smoking influence on the TB infection in contacts of TB cases by means of IGRAs testing. Methods: 806 adults from contact tracing studies were included in the study. In all cases QFN-G-IT and TST were performed. The in vitro tests were performed following the manufacturer's recommendations. We evaluate personal data and factors related with the TB contact. Results: Smoking was a TB infection predictive factor (Relative Risk (R.R): 1.92; 95% C.I: 1.65 – 2.23; p< 0.0000001). There was a significant tendency of the R.R with the number of cigarettes smoked daily and also with the concentration of IFN- γ released. Other predictive factors also were analyzed. Comparing smoking/ non smoking the association was significant in all the analyzed variables.

Impact of Smoking on the TB infection Relative Risk (R.R). QFN-GIT concentration related with the cigarettes number smoked daily

Cigarettes/day	R.R (95% C.I)	R.R p value	QFN-GIT IU/ml	QFN-GIT IU/ml
			Mean \pm S.D	Median
None	1		2.38 \pm 6.02	0.04
1 - 9	1.65 (1.37 - 1.99)	< 0.0001	3.14 \pm 6.90	0.39
10 - 20	2.14 (1.79 - 2.56)	< 0.000001	5.65 \pm 7.47	2.71
> 20	2.41 (2.00 - 2.90)	< 0.000001	7.16 \pm 8.86	3.69

Conclusion. Using QFN-G-IT in contact tracing studies, smoking has been shown to be a risk factor for TB infection, avoiding the BCG interference on the TST. The IFN- γ concentration is on increase when the cigarettes' number raises.