Role of innate immunity in tuberculosis contact genetically related

POSTER PRESENTATION

INTRODUCTION

Mycobactericide activity has been observed in the whole blood model. It is unknown if there are some differences of this activity among groups exposed. Cytokines play an important role in the development of tuberculosis. The aim of this study is to test if there are some differences in the blood of genetically related tuberculosis contacts, as well as its relationship with different cytokines and reactive oxygen species (ROS).

METHODS

We performed a comparative study in mycobactericidal activity using in vitro infection of whole blood of 13 tuberculosis-contact-relatives and 13 control individuals from the general population matched for age and sex. We carried out the profile analysis of proinflammatory cytokine production and ROS.

RESULTS

The mean of antimycobacterial activity, in logarithmic units, was 5.14 in contacts and 4.99 in controls, with the difference between them being statistically significant (t-Student, p=0.047). We analyzed the expression profile of TNF-α in the in vitro infected blood, finding an increased expression of TNF-α in contact relatives (Wilcoxon, p=0.012). There is no correlation between the production of TNF-α and antimycobacterial activity (Spearman correlation coefficient, r=-0.076; p=0.706). Increased production of ROS was observed in the four populations studied in contacts (Mann–Whitney p<0.005).

CONCLUSION

Blood from tuberculosis-contact relatives infected in vitro show lower antimycobacterial activity than infected blood from the general population, suggesting an increased susceptibility of genetically related contacts.

We see a higher production of TNF-α and ROS in blood of family contacts than in controls. Further information is needed to determine that relationship.