# THE CORRELATION BETWEEN THE IMMUNE INDICATORS IN PATIENTS WITH PULMONARY DRUG-SUSCEPTIBLE AND MULTIDRUG-RESISTANT TUBERCULOSIS

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Evolution of tuberculosis (TB) and outcome reflect the mycobacteria (MBT) virulence and the organism's capacity to involve the main immune response, as the cell-mediated response (CMR) involving the main effectors - CD3+ and CD4+ lymphocytes. The innate immunity, with the role to balance the protective and pathogenic immune factors, leads to the lung destruction and chronic inflammation. Its effectors are macrophages, dendritic cells, neutrophils and natural killer cells. The humoral immunity (HI) has a secondary role in the response against to MBT synthetizing the antibodies by CD19+ lymphocytes. **The aim** was to determine the correlation between cell-mediated immunity, humoral immunity, and innate resistance indices in patients with drug-susceptible TB and multidrug-resistant TB (MDR-TB). **Material and methods**: a prospective, case-control study included 129 patients diagnosed with pulmonary TB, from which 57 new cases of drug-susceptible pulmonary TB consisted the control group (CG) and 72 cases of MDR-TB – the study group (SG) which was distributed in the 1st SG with 41 cases with primary MDR-TB and the 2nd SG with 31 acquired MDR-TB. The immune assays included the reaction of blast transformation of lymphocytes (RLBT) by phytohemagglutinin (PHA) and tuberculin (PPD), immunophenotyping of CD3+ and CD19+ cells, phagocytic number (PN). **Results:** A highly strong and postive correlation was identified between levels of RLBT by PHA and CD3+ in all groups; a low and postive correlation between levels of LBTR by PPD and CD3+ in all groups; moderate negative correlation between levels of RLBT to PHA and CD19+ in all groups, low negative correlation between levels of LBTR by PPD and CD19+ in all groups; and moderate negative correlations between PN and RLBT by PHA in all groups, as well as between PN and RLBT by PPD in all groups, low negative correlation between PN and CD3+ in all groups, moderate negative correlation between PN and levels of CD19+ in all groups (Table 1).

**Table 1. Correlation between immunological indices in drug-susceptible and MDR-TB**

| Correlated indices | CG | 1st SG | 2nd SG |
|---|---|---|---|
| RLBT by PHA and CD3+ | r=0,67; p=0,001 [2] | r=0,71; p=0,001 [3] | r=0,78; p=0,001 [3] |
| RLBT by PPD and CD3+ | r=0,38; p=0,01 [2] | r=0,42; p=0,01 [2] | r=0,48; p=0,01 [2] |
| RLBT by PHA and CD19+ | r=0,65; p=0,001 [2] | r=-0,71; p=0,001 [3] | r=-0,71; p=0,001 [3] |
| RLBT by PPD and CD19+ | r=-0,29; p=0,01 [1] | r=-0,32; p=0,01 [2] | r=-0,37; p=0,01 [2] |
| PN and RLBT by PHA | r=-0,59; p=0,001 [2] | r=-0,62; p=0,001[2] | r =0,67; p=0,01 [2] |
| PN and RLBT by PPD | r=-0,39; p=0,01 [2] | r=-0,44; p=0,01 [2] | r=-0,47; p=0,01 [2] |
| PN and CD3+ | r=-0,29; p=0,05 [2] | r=-0,32; p=0,01[2] | r=-0,44; p=0,01[2] |
| PN and CD19+ | r=-0,59; p=0,05 [2] | r=0,44; ; p=0,01[2] | r=-0,67; p=0,01[2] |

**Conclusions:** The indices of cell-mediated immunity positively correlated between them (RLBT by PHA, PPD and CD3+); positively RLBT by PHA and negative RLBT by PPD and CD3+; negatively correlated CD3+ and CD19+ with PN, more evident in MDR-TB, especially in acquired MDR-TB.