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# Short term effects of dendritic cell based immunotherapy in multiple and extensively drug resistant pulmonary tuberculosis in Belarus

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DOI: 10.1183/13993003.congress-2015.PA2702 Published 1 September 2015

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## Abstract

Increase in proportion of multidrug- and extensively drug-resistant tuberculosis (MDR / XDR-TB) leads to low results of the treatment of tuberculosis. Currently used to treat this disease chemotherapy has several serious drawbacks (A.M.Skrahina et al., 2010).

The aim of this study is improve the results of treatment in patients with MDR/ XDR-TB cultures using autologous dendritic cells (ADC) derived from bone marrow (BM).

We has been applied the method of immunotherapy

using ADC in treatment of 12 patients with MDR / XDR-TB (group I - 6 M, 6 F aged 22to 48years). The patients of group II (10 M, 10 F aged 22to 48years, controls) have been treated with standard chemotherapy regimen. Objects of study in vitro were 12 sample of umbilical blood, 12 samples of BM, 12 samples of peripheral blood (PB) of patients with MDR / XDR-TB.

Quality control have shown that the median number of CD34 + HSCs isolated from a sample of PB (39,0 (35,0-45,0) ml) was  $1,05 (0,7-1,9) \times 10^6$  cells, and from a sample of BM 20.0 (18 0-25,0) ml ) was  $1,4 (1,2-5,0) \times 10^6$  cells. Positive clinical and radiological improvement was observed in 66,7% and 30,0%, respectively ( $p < 0.05$  compared with controls), the normalization of the data immunophenotype blood cells and cytokine levels – 81,5% and 48,7% ( $p = 0,056$ ) and abacillation earlier. 83,3% of patients of the group I achieved abacillation up to 2 months.

We have come to the conclusion, that short term effects of ADC based immunotherapy is characterized by the earlier abacillation in comparison with the control group in multiple and extensively drug resistant pulmonary tuberculosis patients in Belarus.

Tuberculosis - management

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### ISSN

Print ISSN: 0903-1936

Online ISSN: 1399-3003