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Results of using of stem cells for treatment of dilated cardiomyopathy at childhood for first six patients

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Objective. Dilated cardimyopathy is serious disease in pediatric age. Bone marrow derived progenitor cell transplantation becoming a promising method of treatment in adult population and there are describe a few cases in pediatrics. Based on this, we have done the BMCs transplantation in six patients.
Methods. The six patients had been admitted for the BMCs transplantation in age at 4 month to 17 year. The diagnosis was established by Echo, x-ray, laboratory data and endomyocardial biopsy. In may 2009 A. Lacis at first in the world use a percutaneous intramyocardial implantation of BMCs for 4 month aged child suffering from idiopathic dilated cardiomyopathy, following detailed, multiple observation of the first patient during one year, the decision to use the method in other patients was made. Seventeen to 90 million BMCs were isolated and as suspension of physiologic saline given to patients by intramyocardial punction in interventricular septum. Ejection fraction, NT-proBNP were measured in each patient evry two month. The data analysis was made by descriptive and mathematical statistic methods. The statistical significance was determined by t-Test ($p=0.05$).
Results. Six month following transplantation we observed increase of ejection fraction. The average basal EF was 33.66%. We observed increasing up to 50.25% ($=7.63$, $p=0.017415$) in 6 month period. The median basal CTR was 0.63 and it decreased to 0.55 in 6 month. The results were within the confidence interval in all measurements. There weren't observed any complications of procedure. The clinical status of patients improved from IV (NYHA) to I-II (NYHA).
Conclusions. We see the intramyocardial administration of bone marrow cells proved to be technically feasible and safe and improves the patients clinical situation and physical measurements. After short term evaluation allows conclude that stem cells transplantation can be used for treatment of dilated cardiomyopathy.