

# APPLICATION OF EMBRYONIC STEM CELLS IN TREATMENT OF PATIENTS WITH RHEUMATOID ARTHRITIS

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Embryonic cell suspensions (ECS) containing stem cells are used in complex treatment of the patients with rheumatoid arthritis (RA).

The main indications for ECS transplantation are:

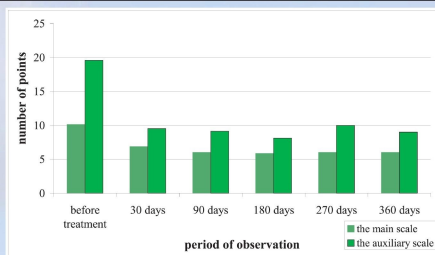
- RA with high activity of inflammatory process, seropositive and seronegative, in case of ineffectiveness of treatment by nonsteroid anti-inflammatory agents and glucocorticoids;

- RA with high activity of inflammatory process, seropositive or seronegative, in case of ineffectiveness of the aggressive therapy in combination with nonsteroid anti-inflammatory agents and glucocorticoids;

- RA, associated with cytostatic myelodepression resulting from aggressive therapy;

- RA, active or non-active phase associated with anemia during 6 months and more, FSI II-III degree, Ro II-IV degree for increase of functional abilities;

- RA, active or non-active phase, seropositive or seronegative, associated with muscle hypotrophy, cachexia, extra-articular lesions - vasculitis.



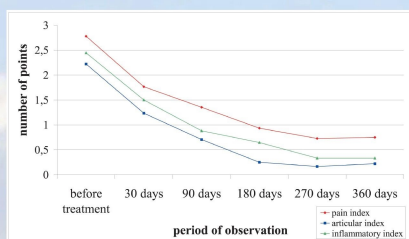
The assessment of the scope of functions in patients with RA on the basis of the modified Stanford questionnaire

Abilities of patients were assessed according to the 4-point scale. The general number of points in all the action categories makes up a functional index (FI). FI from 0 to 6 points refers to the functional abilities of a patient as good. FI from 7 to 11 points - the abilities of a patient are assessed as medium. FI from 12 points and more - weak.

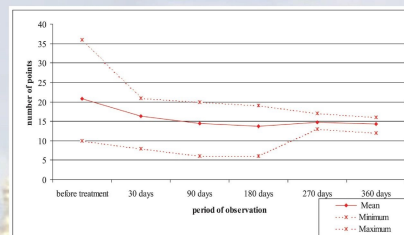
The main effects of ESC transplantation in RA patients:

- syndrome of early post-transplant improvements seen in the decrease of the general fatigability, subsiding pain, better mood, optimism, improvement appetite, and normalization of sleep;
- decreased pain, articular, inflammatory indices;
- preservation of morphological unity of joints;
- increase of the scope of functions;
- inhibition of the disease activity;
- secondary prevention and treatment of extra-articular complications;
- decrease of anemic syndrome manifestations;
- improvement of life quality

Maximum decrease of all RA clinical manifestations 60 days after ESC transplantation. Clinical remission was achieved in 85% of cases.



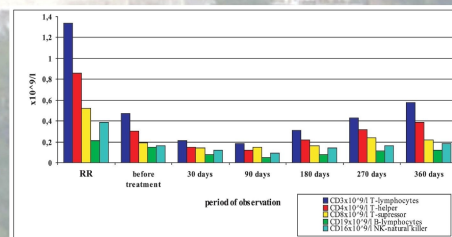
Influence of ESC transplantation on the pain index (PI), articular index (AI), and inflammatory index (II). All the indices were assessed by 4-point scale from 0 to 3



Changes of the scope of functions in RA patients after ESC treatment. Li functional test was used for assessment

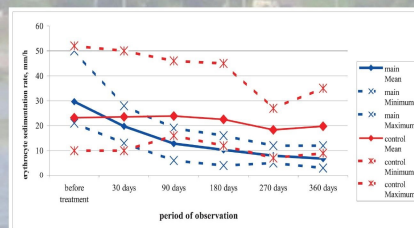
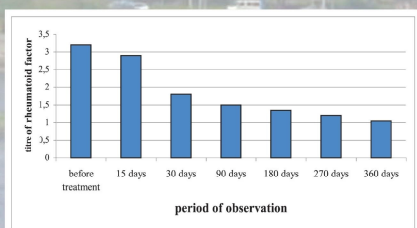
Indices of inflammatory process activity	Before treatment	After treatment						
		15 days	30 days	3 months	6 months	9 months	12 months	
N=26		Estimation by points						
Morning stiffness	3	3	2	1	1	1	1	
Hyperthermia	2	2	2	1	0	0	0	
Synovitis	2	1	0	0	0	0	0	
Erythrocyte sedimentation, mm/h	2	2	2	1	1	0	0	
C-reactive protein	3	2	2	1	1	0	0	
Alfa-2-globulin, %	2	2	2	2	2	2	2	
Total	14	12	10	6	5	3	3	

Change of the disease activity in patients with RA after SC transplantation  
activity: I - minimal (1-6 points), II - medium (7-12 points), III - light (13-18 points), no activity - 0 points



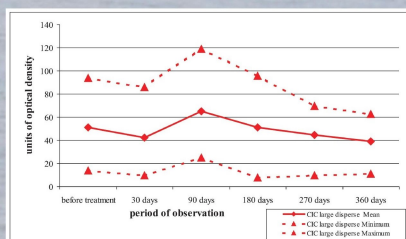
Indices of the cell immunity in patients with RA, receiving SC transplantation

Titre alteration of rheumatoid factor (RF) in RA patients receiving ESC transplantation (RF ≤ 1,5 - negative, RF 1,5 - 2,0 - slightly positive, RF > 2,0 - positive)

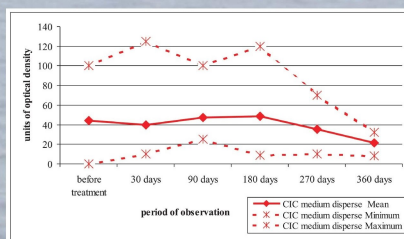


Changes in erythrocyte sedimentation rate

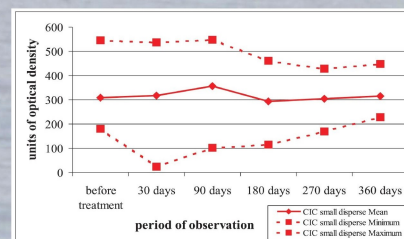
The main group consisted of patients receiving embryonic cell suspensions containing stem cells. The control group included patients receiving conservative therapy



Content dynamics of large-disperse circulating immune complexes in RA patients after ESC transplantation



Content dynamics of medium-disperse circulating immune complexes in RA patients after ESC transplantation



Content dynamics of small-disperse circulating immune complexes in RA patients after ESC transplantation

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