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Mesenchymal stem cells increases the effectiveness of anti-inflammatory therapy and help to increase the duration of remission with newly diagnosed Crohn's disease

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For Crohn's disease (CD) at the moment there is no sufficiently effective treatment modality. Up to 90% of the patients are exposed to during the life of one or more surgical interventions. However, the treatment of patients with CD at the beginning of the disease is a priority for the gastroenterologist.

Objective: To assess the impact of culture of mesenchymal stem cells (MSCs) in patients with newly diagnosed CD for the duration of remission.

Materials and Methods: Divided into two groups of patients with newly diagnosed CD. The first group of MSCs (n=15)-CD patients who received MSC, the second group-5-ASA/GCS (n=15)-patients who received standard anti-inflammatory therapy drugs 5-aminosalicylic acid (5-ASA) and corticosteroids (GCS). Age of patients ranged from 19 to 34 years (Me-22), the severity of the attack of the disease-moderate and severe, the length of the defeat-ileokolit, ileitis and colitis, the observation time ranged from 28 to 48 months. Clinical activity was assessed by the Crohn's disease activity index (CDAI). The culture of allogeneic MSCs injected drip in doses of 3 million per 1 kg of body weight on 0-1-26 week.

Results: CDAI in group 1 was 242,6±11,7 points, in the 2-nd group-240,9±12,9 points (p=0,83), CRP levels in group 1 was 29,3±6.4 mg/l, the 2-nd-27,8±4,8 (p=0,47). After 1 year of follow- CDAI in group 1 was 70,0±11,0 points in the 2-nd-133,8±22,2 points (p<0,001), CRP levels in group 1 was 6,36±1,5 mg/l, the second-12,2±2,9 (p<0,001). After 2 years of CDAI in group 1 was 99,6±19,3 points in the 2nd-147a,1±22,1 points (p<0,001), CRP levels in group 1 was 16.0±6,0 mg/l, the second-18,8±4,4 (p=0,156). After 3 years, the CDAI in group 1 was 110,5±21,9 points in the 2-nd-180,6±20,3 points (p <0,001), CRP levels in group 1 was 10.9±2,6 mg/l, the 2-nd-16,9±3,0 (p<0,001). After 4 years-the CDAI in group 1 was 120,0±22,3 points in the 2-nd-208,7±17,6 points (p<0,001), CRP levels in group 1 was 11,3±2,6 mg/l, the 2-nd-15,5±2,4 (p<0,001). The relative risk (RR) of recurrence in patients with CD receiving MSCs (group 1) compared to the 2-nd group (5-ASA/GCS) at 1 year RR- 0.14 (95% CI 0,02-1 , 02) (p=0,04), (x2-4,26). RR of relapse after 2 years observations-0.38 (95% CI 0,12-1,15) (p=0,13), (x2=2,3), after 3 years RR-0.36 (95% CI 0,15-0,89) (p=0,03), (x2, 4, 8), after 4 years RR-0.38 (95% CI 0,18-0,81) (p=0,009), (x2-6,81).

Conclusions: MSCs increase the effectiveness of anti-inflammatory therapy in patients with newly diagnosed Crohn's disease, helping to increase the duration of remission. Risk of recurrence of CD within 3 years after achieving remission in 3 times and 4 years after remission 2.5 times significantly lower in patients who received MSCs

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