



2. CELL THERAPY IN CHRONIC RHINOSINUSITIS IN CHILDREN

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Introduction. Chronic Rhinosinusitis is one of the most common chronic diseases worldwide, having an incidence between 1%-12% Globally and an incidence of 10.9% in Europe. CRS (Chronic Rhinosinusitis) is an underestimated disease, this condition leads to a significant impact on the quality of life of the patients it affects, furthermore, CRS has an unquestionable impact on a societal level with increasing economic losses attributed to this disease.

Aim of study. This literature review aims to find and discuss evidence that relates to the complex treatment of CRS with Cell Therapy, putting in the spotlight the molecular, morphological, and structural nuances that stand at the base of understanding CRS and its treatment with Cell Therapy.

Methods and materials. For the elaboration of this literature review, scientific evidence about the efficacy of Cell Therapy in CRS was collected from sources such as ScienceDirect, PubMed, The International Journal of Cell Differentiation and Proliferation, and The Moldovan Medical Journal.

Results. In a study conducted on 19 pediatric patients with CRS and 116 healthy children, statistically significant differences were found. CRS patients have shown higher levels of IG E (9.2 ± 0.27 vs 57.9 ± 22.79) and CD4/CD8 thus showing an allergic and inflammatory implication. ASL-O was also significantly higher in patients suffering from CRS in contrast to the healthy control group (11.5 ± 2.08 vs 178 ± 96.5). In addition, a statistically significant decrease of T-lymphocyte activity was reported in ill individuals in comparison to healthy individuals. Furthermore, an increase of B-lymphocyte activity was noted with the increase in IG A levels. Treatment using cell therapy was administered, the study group was treated and assessed over a period of one year. During this period clinically significant improvements were noted, a decrease in nasal resistance, and an increase in total volume indices were found in all children treated with autologous mononuclear cells. Another In Vivo study has shown the role of mesenchymal stem cells in the treatment of CRS. 70 subjects were studied, of which 32 were the control group and 32 where exposed to *Aspergillus fumigatus*, 12 of those exposed to *Aspergillus fumigatus* underwent treatment with mesenchymal stem cells (MSC). Subjects treated with MSC daily evolution were monitored, which showed great improvement in contrast with the group that did not undergo MSC treatment. Histological lesions were minimal, and most of the sinuses and nasal mucosa were found to be normal. Furthermore, Patients that underwent Cell therapy have shown lesser resistance to antibiotics.

Conclusion. The aforementioned results have shown evidence that Cell Therapy is effective in the complex treatment of CRS.