Expression of Toll-like receptors on peripheral blood white cells in acute otitis media
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ABSTRACT
Objective: From 10 to 15% of children suffer from recurrent acute otitis media (AOM). An association between polymorphism in TLRs and their co-receptor CD14 with otitis media proneness has been described in children. Moreover, the experiments on animal models have shown that TLRs and their signaling molecules are critical for timely resolution of bacterial otitis.
Aim: The aim of this study was to determine the expression of TLR1, TLR2 and TLR4 on lymphocytes, monocytes and granulocytes in peripheral blood in children with recurrent or persistent AOM.
Methods: The study was performed on a group of 25 children hospitalized for recurrent AOM, failures of previous treatments and/or acute mastoiditis. The results were compared to the control group of healthy children at the same age. The expression of TLRs on peripheral blood white cells was measured by flow cytometric analysis. The results were expressed as mean fluorescence intensity (MFI). The statistical analysis was performed using the Mann–Whitney U test.
Results: The highest expression of TLR was found on monocytes, the lowest on lymphocytes in both groups of children (AOM and the control one). The expression of TLR1 was the lowest and expression of TLR4 was the highest on all examined cells. The expression of all examined TLRs on monocytes was significantly higher in the AOM group.
Conclusions: Peripheral blood monocytes are characterized by increased expression of TLRs in the course of recurrent AOM.
Keywords: Expression; Toll-like receptors; Acute otitis media
Słowa kluczowe: ekspresja; receptor Toll podobny; ostre zapalenie ucha śródkowego