Regulacje molekularne procesu niszczenia kości w zapaleniu perlakowym ucha
Molecular control of bone resorption in chronic otitis media with cholesteatoma

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SUMMARY
Bone destruction in chronic otitis media with cholesteatoma is a common phenomenon. Expanding growth of cholesteatoma in the middle ear causes ischemia of the mucosa and bones with granulation tissue production.

The aim of this study: was to assess the expression and distribution of the key regulators of bone destruction: osteoprotegerin (OPG), Receptor Activator for Nuclear Factor κ B Ligand (RANKL) and tumour necrosis factor α (TNF-α) in chronic otitis media with cholesteatoma and their role in the pathomechanism of bone resorption.

Material and methods: We performed immunohistochemical study of the cholesteatoma tissue collected from 21 patients suffering from chronic otitis media with cholesteatoma and 16 samples of normal external auditory meatal skin. This material was analyzed histopathologically and by means of immunoperoxidase immunohistochemical technique with the use of antibodies against OPG, RANKL and TNF-α and their quantities evaluation.

Results: In all patients with cholesteatoma, features of auditory ossicles and temporal bone destruction were demonstrated. We found that cholesteatoma and granulation tissue cells release factors of the OPG/ RANKL/RANK system and TNF-α. In cholestatoma a higher expression of RANKL, OPG and TNF-α positive was demonstrated when comparing to the skin of external auditory meatus. These factors were relatively higher expressed in the stroma rather than in the epithelium of cholesteatoma. RANKL-positive cells were demonstrated mainly in the stroma cells, whereas OPG-positive ones in the cholesteatoma epithelium. The reaction with the antibodies against OPG, RANKL and TNF-α was weak in the external auditory meatal skin.

Conclusions: Bone destruction in chronic otitis media with cholesteatoma is a common process dependent on osteoclast activating factors. OPG/ RANKL/RANK system and TNF-α play a key role in the process of osteolysis in otitis media with cholesteatoma. We found no positive correlation between bone destruction advancement and the level of examined proteins.

Hasła indeksowe: przewlekłe zapalenie ucha środkowego, resorpcja kości, OPG/ RANLK/RANK, TNF-α