Rheumatoid arthritis (RA) is an inflammatory, autoimmune disease that, in addition to primary articular manifestations, affects multiple organs, including the auditory system. Sensorineural hearing loss (SNHL) is the most prevalent type of hearing impairment (HI) affecting patients with RA, noting a prevalence of 25-75 percent, followed by conductive (CHL) and mixed hearing loss (MHL). (Emamifar. Open Rheumatol J 2016;10:26). The objective of this study was to discuss possible pathologies, associated factors, and management of HI in RA patients. Therefore, a comprehensive literature search of available databases including Pubmed, Embase, Cochrane, and ComDisDome was performed.

PATHOLOGY OF HEARING IMPAIRMENT IN RHEUMATOID ARTHRITIS

The exact mechanism of hearing impairment in patients with RA is not completely understood. However, a number of possible pathologies has been discussed that are summarized as follows:

1. Synovial destruction of incudostapedial and incudomalleolar joints due to an inflammatory process, though this may occur without any clinical presentation since they are functionally fixed during sound transmission (Figure 1);
2. Rheumatoid nodules in the ear, which may be triggered by methotrexate (MTX);
3. Auditory neuropathy as a part of mononeuritis multiplex;
4. Cochlear hair cells or the inner ear destruction because of disposition of the immune complex;
5. Drug-induced ototoxicity: Salicylates, non-steroidal anti-inflammatory drugs, antimalarial, and some disease-modifying antirheumatic drugs (DMARDS); and
6. Other causes such as pro-inflammatory cytokines e.g., interleukin-6 and matrix metalloproteinases-3.

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ENVIRONMENTAL FACTORS

Smoking, alcohol, and noise exposure can affect the auditory system. Cigarette smoking can cause harmful effects on external hair cells, leading to deceased cochlear function. Additionally, it increases the risk of developing vasculitis and
The Hearing Journal  July 2016

30

Hearing impairment is a multifactorial disease that can present concurrently with RA, significantly affecting quality of life and long term prognosis of patients.

Hearing impairment is a multifactorial disease that can present concurrently with RA, significantly affecting quality of life and long term prognosis of patients. Efforts should be made to clarify the pathogenesis of HI, which may lead to better treatment options. Previous studies suffer from small sample sizes which could be limited by conducting a meta-analysis.