

# Chemotherapy and hearing loss

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Cancer is a term used to denote more than 100 types of diseases which the disordered and abnormal growth of cells invasive potential in common [1].

Head and neck cancers are usual anatomical and functional term to describe cancers present in the upper aerodigestive tract and whose histologic profile is composed of 90% of the spinocellular type [2].

It is a multifactorial disease because it contains genetic and environmental components as etiology. Alcohol and cigarette smoking are the most common etiological agents [3].

With advances in science and greater longevity, concern for the patient's quality of life has been valued. Thereby, alternative treatments that aim at the preservation of organs and structures have emerged, such as Radiotherapy and Cisplatin-based Chemotherapy [3].

Cisplatin or cis-diaminodichloroplatinum is an antineoplastic agent, but with severe side effects such as neurotoxicity, nephrotoxicity and toxicity to the intestinal tract. Such effects occur by the accumulation of such substance in the body and consequent toxicity. According to some scientific articles, this drug totally or partially alters the cochlear and vestibular function, by injuring sensorial structures of the inner ear, mainly the inner hair cells [4].

Studies have shown that cisplatin also damages the outer hair cells within the Corti organ and the marginal cells within the vascular stria. The destructive pattern of outer hair cell loss progresses from lateral to medial, starting at the cochlear base and progressing upward to the cochlear apex with each infusion of cisplatin. Cisplatin- induced sensorineural hearing loss may begin in the acute phase of treatment

and is characterized by bilateral progressive, irreversible and high-frequency loss [5].

Sensorineural hearing loss limits or causes the individual to be unable to fulfill his / her role in society, causing impairment in the affective and professional fields. As a result of this sensory deprivation, the individual becomes unable to communicate properly with other people, generating frustration and leading to changes in their quality of life [6].

Despite the advances, cisplatin-based chemotherapy still has many side effects such as hearing loss, and this loss hits the patients' quality of life. New therapeutic strategies should be sought to minimize such side effects and impairments in the quality of life of these patients.

## References

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