OTOTOXICITY AFTER ONCOLOGIC TREATMENT TO HEAD AND NECK TUMOR

Myriam L. Isaac, PhD1; Ana Helena B. Dell’Aringa, MD2; Gustavo V. Arruda, MD2; Alfredo R. Dell’Aringa, PhD2
Department of Otorhinolaryngology of FMUSP- RP1 / Department of Otorhinolaryngology of FAMEMA’s General Hospital2

ABSTRACT

Objective: To evaluate the functionality of the auditory system in patients who underwent exclusive radiotherapy and chemoradiotherapy treatment with cisplatin to treat head and neck tumors. Study Design: Case series with a historical data collection. Setting: From May 2007 to May 2008 for the Department of Otolaryngology Radiotherapy at the Faculdade de Medicina de Marília, São Paulo, Brazil. The study was classified as Category III; Ethics Committee of the Departament of Otorhinolaryngology at Faculdade de Medicina de Marília. Audiological evaluation (Pure Tone Audiometry for air and bone conduction), Speech Auditory Tympanometry, Acoustic Reflex testing and Distortion Product Otoacoustic Emissions was performed in 49 patients diagnosed with head and neck neoplasias and treated with exclusive radiotherapy (19 patients) or chemoradiotherapy (30 patients). We considered as reduction of the auditory acuity, the decrease of at least 5 db in an isolated frequency or of 10 db in two or more successive frequencies, according to the American Speech-Language-Hearing Association (ASHA) criteria. Results: 10.5% left ears and 26.3% right ears presented decreased hearing soon after the radiotherapy treatment. 57 % left ears and 70% right ears presented decreased hearing soon after the chemoradiotherapy treatment. All frequencies from 0.25 to 6 kHz showed significant auditory damage (p < 0.05), soon after chemoradiotherapy treatment. Chemoradiotherapy presented more auditory damage than exclusive radiotherapy treatment.

INTRODUCTION

Auditory damage is one of the main complications of oncological therapy in patients with head and neck tumors [1]. Recently, the addition of chemotherapy (CT) with cisplatin to radiotherapy (RT) has been improving the survival rate of patients with these neoplasias, becoming a standard treatment for tumors locally advanced. However, both treatments, chemotherapy with cisplatin and radiotherapy, are known for their ototoxic effects.

METHODS AND MATERIALS

Study Design Case series with planned data collection. Setting: From May 2007 to May 2008 by the Department of Otorhinolaryngology and the Department of Oncology/Radiotherapy at Faculdade de Medicina de Marília. Subjects and Methods: Audiological evaluation (Pure Tone Audiometry (air and bone conduction), Speech Auditory Tympanometry, Acoustic Reflex testing and Distortion Product Otoacoustic Emissions) was performed in 49 patients diagnosed with head and neck neoplasias and treated with exclusive radiotherapy (19 patients) or chemoradiotherapy (30 patients). We considered as reduction of the auditory acuity, the decrease of at least 5 db in an isolated frequency or of 10 db in two or more successive frequencies, according to the American Speech-Language-Hearing Association (ASHA) criteria.

RESULTS

Averages of air conduction tonal hearing thresholds pre and post CHEMORADIOTherapy treatment by frequency by ear.

Patients with head and neck cancer submitted to the conventional radiotherapy treatment, combined with the chemotherapy with cisplatin, presented a high incidence of decreased hearing by the end of treatment. Strong evidence was observed linking auditory alteration to the amount of radiotherapy treatment.

CONCLUSIONS

Patients with head and neck cancer submitted to the conventional radiotherapy treatment, combined with the chemotherapy with cisplatin, presented a high incidence of decreased hearing by the end of treatment. Strong evidence was observed linking auditory alteration to the amount of radiotherapy treatment.

REFERENCES


CONTACT

Tel.: 14-3321-3400
Fax: 14-3321-4300
E-mail: mail@fmusp.br

1. Profª, Dra. Myriam L. Isaac
Faculdade de Medicina de Ribeirão Preto - Universidade de São Paulo - Brasil
2. Profª, Dra. Ana Helena B. Dell’Aringa