

## EPIDEMIOLOGY, GENETICS AND SOCIAL IMPACT OF ARHL: A PORTUGUESE EXAMPLE

Flook, M<sup>1</sup>; Lopes, S<sup>1</sup>; Alves, L<sup>1</sup>.; Aparício, M<sup>3</sup>; Martins, JH<sup>4</sup>; Silva, E<sup>5</sup>.; Murta, A<sup>5</sup>.; Andrade, S<sup>6</sup>.; Andrade, C<sup>7</sup>.; O'Neill<sup>8,9,10</sup>, A; Matos, T<sup>1</sup>.; Antunes, M, <sup>11</sup>.; Escada, P<sup>8,9,10</sup> Alcântara, P<sup>7</sup>.; O'Neill<sup>8,9,10</sup>, J; Villaverde Cabral<sup>7</sup>, M; Fialho<sup>1</sup>, G; Caria, H<sup>1,2</sup>

<sup>1</sup> Deafness Research group, BTR Unit, BioISI, Faculty of Sciences, University of Lisbon (FCUL), Portugal; <sup>2</sup>ESS/IPS-School of Health, Polytechnic Institute of Setubal, Portugal; <sup>3</sup> FCUL, Lisbon, Portugal; <sup>4</sup>ENT Service, CHUC, Coimbra, Portugal, <sup>5</sup> Widex, Lisbon, Portugal; <sup>6</sup> ENT Service, Hospital José Luciano de Castro, Leiria, Portugal; <sup>7</sup>ICS-IE-UL, Lisbon, Portugal; <sup>8</sup>ENT Service, CHLO-HEM, Lisbon, Portugal; <sup>9</sup> FCM/UNL, Lisbon, Portugal; <sup>10</sup>CEFITEC/FCT/UNL- Lisbon, Portugal; <sup>11</sup>CEAUL-FCUL Lisbon, Portugal

Age-related hearing loss (ARHL) is the most common sensory impairment in the elderly, affecting approximately 60% of all individuals over 65 years in the world. Due to the physiology complexity of ARHL, its mechanisms are not fully understood as well as the relation between ARHL and health status.

The existence of genetic susceptibility predisposing for ARHL implies that this is not an inevitable condition, but a complex disease with possible treatment and prevention what is particularly relevant to the field of active aging. The genetic susceptibility associated with ARHL has been described through the association with different genes involved in hereditary deafness, oxidative metabolism or with specific mitochondrial haplogroups. It is reported that about 30% of the individuals with ARHL also have tinnitus, this leading to the increase of elderly frailty. Several studies referred the possibility of common metabolic pathways between ARHL and tinnitus.

In the present study, epidemiological and psychological data are presented for about 500 elderly individuals (over 65 years old) from the Portuguese population. The results of the study of genetic variants concerning *NAT2* and *GRM7* genes are presented. We also report a high variety of mtDNA haplogroups, already expected in the Portuguese population. Gender comparisons are discussed considering hearing loss and audiological patterns. Elderly individuals aged 70-80 or more have significantly an increased probability of having ARHL. Regarding emotional and social difficulties, the worst listeners present more difficulties and more depressive symptoms, being this more common in women. Of the total of the individuals, about 39% reported tinnitus and present high heterogeneity in epidemiologic factors.

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