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INTRODUCTION

Tinnitus is a clinical syndrome with an estimated 30 million sufferers in the United States [Snow, 2004]. Of those who develop a psychiatric form of tinnitus, the majority of patients are those with chronic complaints of hearing loss. However, the relationship between both conditions is complicated by dissimilar age-specific prevalence rates and interfering risk factors. For tinnitus, these comprise male sex, cigarette smoking, occupational noise exposure, lower income, higher body mass index, and a longer duration ofacusis [temporary loss of hearing [TQ] (Hallam et al., 1988) and subjects were genotyped for the biallelic polymorphisms (SNPs) in the GDNF gene (rs3812047, rs884344, and rs1110149) were genotyped in 99 Caucasian patients who presented with tinnitus lasting more than 6 months. GDNF genotypes were then used together with previously published data on two BDNF markers (rs6265 and rs2049046) in a multiple regression approach to predict tinnitus severity as graded by the Tinnitus Questionnaire (TQ).

RESULTS

Neurotrophins play key roles in tinnitus experimental and animal models of tinnitus and may accelerate the search for susceptibility factors. Together, these experimental data warrant further exploration of neurotrophin-related signaling in animal models of tinnitus and may accelerate the search for susceptibility factors.

DISCUSSION

INFORMATION ON NEUROTROPHIN EXPRESSION

METHODS AND MATERIALS

Neurotrophic factors have long been implicated in neuronal survival, cellular development, and repair, and have been involved in contributing to the pathophysiology of tinnitus. Specifically, expression of brain-derived neurotrophic factor (BDNF) is upregulated in spiral ganglions of the cochlea following exposure to the ototoxic drug salicylate. This trauma-induced upregulation, and an age-related decrease observed in cochlear BDNF levels, strongly argues in favour of a pathological plasticity response. We sought to determine whether glial cell-derived neurotrophic factor (GDNF), in addition to BDNF, may affect tinnitus as a phenotypic correlate of impaired plasticity.

METHODS

BDNF and GDNF Variants Predict Tinnitus Severity

Tinnitus is a common clinical syndrome with an estimated 30 million sufferers in the United States [Snow, 2004]. Of those who develop a psychiatric form of tinnitus, the majority of patients are those with chronic complaints of hearing loss. However, the relationship between both conditions is complicated by dissimilar age-specific prevalence rates and interfering risk factors. For tinnitus, these comprise male sex, cigarette smoking, occupational noise exposure, lower income, higher body mass index, and a longer duration ofacusis [temporary loss of hearing [TQ] (Hallam et al., 1988) and subjects were genotyped for the biallelic polymorphisms (SNPs) in the GDNF gene (rs3812047, rs884344, and rs1110149) were genotyped in 99 Caucasian patients who presented with tinnitus lasting more than 6 months. GDNF genotypes were then used together with previously published data on two BDNF markers (rs6265 and rs2049046) in a multiple regression approach to predict tinnitus severity as graded by the Tinnitus Questionnaire (TQ).

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