Tinnitus suppression in patients with cochlear implants.
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OBJECTIVE: To determine the degree of tinnitus suppression provided by currently available multichannel cochlear implants and to determine factors that can influence this process.

STUDY DESIGN: Prospective cohort. SETTING: Tertiary-care referral center. PATIENTS: Thirty-eight adult patients (18 years of age or older) with severe-to-profound hearing loss and tinnitus who met criteria for cochlear implantation. INTERVENTION: Cochlear implantation with a multichannel cochlear implant device. MAIN OUTCOME MEASURES: Patients rated the intensity of their tinnitus using a semiquantitative scale before and after cochlear implantation. These data were analyzed to determine the significance of the reduction of tinnitus after implantation. Tinnitus levels after implantation were also analyzed to determine whether the level of speech recognition, patient gender, or the implant type influenced the degree of tinnitus reduction. RESULTS: Statistical analysis revealed a significant reduction in tinnitus intensity in patients using cochlear implants, with 35 of 38 patients (92%) experiencing a reduction in tinnitus intensity. All multichannel implants studied afforded similar degrees of tinnitus suppression. The degree of tinnitus reduction was not correlated with speech recognition, as measured by CID Everyday Sentence scores. Female patients had significantly greater degrees of tinnitus before implantation, but both male and female patients demonstrated similar levels of tinnitus after implantation. No patient experienced greater levels of tinnitus after implantation. CONCLUSION: All currently available multichannel cochlear implant devices provide effective and similar levels of tinnitus suppression when activated. Exacerbation of tinnitus as a result of cochlear implantation does not represent a significant risk. The mechanisms by which cochlear implants exert tinnitus suppression are, as yet, unclear.