The UK Cochlear Implant Referral Criteria Audit (CIRCA): Socioeconomic and ethnic disparities associated with access to cochlear implantation for severe–to–profound hearing loss: a multicentre study of 6,236 UK adults

INTRODUCTION

• Approximately 1.2 million people in the UK suffer from severe or profound hearing loss (1). One option for management of this degree of hearing loss is a cochlear implant (CI).

• Following the change in UK National Institute for Health and Care Excellence (NICE) guidance in 2019, many more adults are now potentially within audiological criteria (2).

PRIMARy OUTCOME MEASURE

To identify potential predictors of referral for assessment of cochlear implantation

SECONDARY OUTCOME MEASURE

To identify potential predictors of discussion of the option of referral for assessment of cochlear implantation

FUNDING

BSO grant. Funders had no role in the design, data collection, analysis or writing of this study.

METHODS

• National retrospective audit

  INTEGRATE-delivered and supported by British Society of Otology (BSO) and British Cochlear Implant Group (BCIG).

  • Inclusion criteria: adults (18 years and older) who had audiological testing (pure-tone audiometry, auditory brainstem response or comparable) between 1st July and 31st December 2021 that confirmed their eligibility for CI referral as per NICE criteria (2).

  • Only centres with Audibase software (the most common Audiology software in the UK) were eligible to submit data. Duplicate patients were excluded.

  • All UK general ENT, Audiology and Audiovestibular departments were invited to participate via social media and mailouts from supporting organisations.

  • Eligible cases were identified retrospectively using an open-source electronic search tool (the BCGI CI Referral crystal report) in Audibase, as designed by the BCIG.

  • Site teams retrospectively analysed clinical notes, letters, audiology notes:

    • Were patients referred for a CI Assessment?

    • Were patients informed that they were eligible for a CI assessment?

    • Patient and hospital factors

DATA ANALYSIS

Baseline characteristics = means or proportions (chi-squared test or ANOVA).

Backward stepwise logistic regression model to explore predictors for both primary & secondary outcomes: Odds ratios + 95% confidence intervals.

RESULTS

• Only 9% of eligible patients were referred for assessment

• Only 36% of eligible patients had a documented discussion about their eligibility for CI assessment.

Impact of Ethnicity

• Ethnicity and English language did not confer a significant association with likelihood for referral.

• Ethnicity conferred a significant association with likelihood for discussion of a CI (p<0.001), whereby Asian patients (OR 0.57, 95% CI 0.42-0.76) and Black patients (OR 0.55, 95% CI 0.33-0.89) were less likely to have a discussion compared to white patients.

Impact of Socioeconomic Status and Geography

• Patients from LEAST deprived locations (IMD)

  • MORE likely to be referred (P<0.001)

  • Least deprived region OR 1.21 (1.28-3.3) ref. most deprived location

  • MORE likely to have a discussion (P<0.001)

  • Least deprived region OR 1.45 (1.09-1.92) ref. most deprived location

Impact of Age & Gender

• Older patients were less likely to be referred (OR 0.97, 95% CI 0.97-0.98).

• Older patients were less likely to be informed of their eligibility (OR 0.98, 95% CI 0.98-0.98).

Impact of Past Medical History

• Patients with multimorbidity were less likely to be referred than those without (OR 0.72, 95% CI 0.57-0.91).

• Patients with cognitive impairment (p=0.001) and physical disabilities (p=0.001) were more likely to have a discussion about their eligibility than those without (cognitive: OR 1.44, 95% CI 1.11-1.86; physical: OR 1.35, 95% CI 1.01-1.82).

Impact of Hospital Factors

• Patients seen at a centre specialising in CI were more likely to be referred (OR 3.96, 95% CI 4.2-7.53).

• Patients at centres specialising in CI were more likely to have a discussion about referral (OR 3.01, 95% CI 2.58-3.50).

• Discussion about referral was more likely if there was a CI champion at that hospital (OR 3.86, 95% CI 3.16-4.71).

DISCUSSION

WHAT NEXT?

• Ensure all sites have a CI champion (25% did not) (3)

• Longer term

  • Encourage regular re-audit using Audibase BCGI CI referral crystal report

  • Automatic alerts on Audibase

  • Increase capability and capacity in departments

STUDY LIMITATIONS

• Retrospective note analysis over 6 months.

• Lower representation from Scotland & Wales; no NI sites

• Were patients representative of UK population?

CONCLUSION

• Eligible patients inadequately referred and discussed for cochlear implant assessments

• Disparities in care across the UK

• Further research required:

  • To understand disparities

  • Increase equitable access to treatment and assessment across the UK

  • Focus on education of secondary healthcare providers

  • Identify how best to facilitate discussions about referral for CI assessment for eligible patients

REFERENCES


2. NICE guidance MG06. https://www.nice.org.uk/patients/54536

3. CI champion schema. https://www.baaudiology.org/professional-information/cochlear-implant-champions/