Spectral and temporal processing by prelingually deafened CI users.

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Ethische beoordeling	Positief advies
Status	Werving gestopt
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON19912

Bron
NTR

Aandoening

deafness, cochlear implant, prelingually deafened

doofheid, cochleair implantaat, prelinguaal doof

Ondersteuning

Primaire sponsor: dr. ir. J. Brokx, MUMC
Overige ondersteuning: MUMC
Cochlear Europe Ltd

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

For the listening task of part 1A the main study parameter is the electrode discrimination ability per electrode. The main study parameter of part 1B is the difference between subjects'

speech understanding with the standard and adapted speech programme. The main study parameters of the listening task of part 2 are the mean amplitude modulation detection thresholds of the prelingually and postlingually deafened CI-users.

Toelichting onderzoek

Achtergrond van het onderzoek

This study investigates the spectral and temporal processing of a specific group of CI users: the prelingually deafened. In part 1A we will determine the electrode discrimination abilities of a group of prelingually deafened CI users. In part 1B we will use this information to create a new speech programme with less electrodes, and evaluate this programme objectively and subjectively. Part 2 focusses on the temporal procesing skills of these prelingually deafened CI users and looks into the corelation between temporal processing skills and speech understanding (part 2B).

Doel van het onderzoek

Prelingually deafened cochlear implant users mostly do not achieve a high level of speech understanding with their cochlear implant (CI). We hypothesize that the information these patients are getting from their CI is often too complex for them to process, given their compromised auditory processing abilities due to the long duration of deafness. A simplified auditory signal, containing only discriminable spectral channels, might improve speech understanding with the CI specifically for this group of patients. Also, the influence of the longterm deafness on temporal processing abilities and whether temporal processing skills are related to speech understanding performance with the CI, is yet unknown. More knowledge on these topics is important for the development and adjustment of speech processing strategies for this group of patients.

Objectives:

To determine the electrode discrimination abilities of prelingually deafened CI users (part 1A) and to adjust the speech processing strategy based on these possibilities, in order to improve auditory speech understanding with the cochlear implant (part 1B). Furthermore, we want to determine the
temporal resolution capacities of prelingually deafened CI users, obtain reference values in postlingually deafened CI users measured under the same testing conditions (part 2A) and investigate the correlation between temporal resolution and speech understanding (part 2B).

Onderzoeksopzet

Part 1A: Electrode discrimination measured with an adaptive listening task, expressed as the minimal distance (either in basal or apical direction) between two electrodes that is needed for the subject to perceptually distinguish both electrodes in 70,7% of cases. This part of the study ends when all testing procedures are terminated (3 visits).

Part 1B: Speech understanding with both programmes is measured on the NVA monosyllabic word list (phoneme score in %), the number of words correct per minute on the speech tracking test and the prosody- and wordscore in % on the Erber test. This part of the study has a fixed time frame of 4 weeks, with 3 visits. The third visit is the endpoint.

Part 2A: The modulation detection thresholds are measured with an adaptive procedure. They are the minimal modulation depth that is needed for the subject to be able to perceptually distinguish between an amplitude modulated noise sample and an unmodulated noise sample, and a measure of temporal resolution. This part of the study ends after termination of the test procedure and speech testing (2 visits). Speech tests are the same as in part 1B.

Onderzoeksproduct en/of interventie

An intervention is only done in part 1B of the study. Parts 1A, 2A and 2B are observational cohort studies. The intervention in part 1B consists of an adaptation in the listening programme the subject uses with his cochlear implant, thus a change in the setting of the medical device that the subject already uses. The new programme is made with the standard clinical fitting software. This new programme is based on the results for the individual subject of part 1A and will comprise the switching off of non-discriminable electrodes. A comparison is made between this new programme (in terms of subjective preference and objective speech understanding sores) and the standard clinical programme that the subject has used until then.

Contactpersonen

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

1. Mother tongue Dutch;

2. Normal reading skills;

3. Oral communication as primary mode of communication;

4. Age at implantation >16 years;

5. Age at inclusion >18 years en < 80 years;

6. Onset of deafness before the age of 4;

7. Minimally 1 year experience with the CI.

For part 1 of the study an additional exclusion criterion is: Implanted with a CI of the brand Cochlear. For part 2 of the study there is a second group of participants for whom the onset of deafness is after the age of 4 years.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

There are no additional exclusion criteria.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	Niet-gerandomiseerd
Blindering:	Open / niet geblindeerd
Controle:	Geneesmiddel

Deelname

Nederland

Status:	Werving gestopt
(Verwachte) startdatum:	02-07-2012
Aantal proefpersonen:	33
Type:	Werkelijke startdatum

Ethische beoordeling

Positief advies

Datum:	15-05-2012
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 39776
Bron: ToetsingOnline
Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL3295

Register	ID
NTR-old	NTR3441
CCMO	NL40061.068.12
ISRCTN	ISRCTN wordt niet meer aangevraagd.
OMON	NL-OMON39776

Resultaten

Samenvatting resultaten
N/A