Clinical outcomes after cochlear implant procedures in individuals > 80 years of age

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Disclosures

Dr Eva Karlström is on the Advisory board of MedEl
Challenge

Increasing demand for cochlear implants (CI) in elderly individuals (> 80 years of age)

We are not allowed to refuse CI surgery due to high age alone
Specific problems related to CI surgery in the elderly

Medical/perioperative:

Hypotension, risk of myocardial infarction, stroke, postoperative confusion

Postoperative:

Increased risk of severe vertigo, larger impact of postoperative relatively benign complications

Coping/management:

Difficulties managing training and handling
Retrospective clinical review

• All patients age > 80 years 2003 → november 2015 from CI surgery database

• Retrospective review of electronic charts (Take Care®) and audiometry database (Auditbase®)

• Data from 6 months, 1 year and 2 years after surgery + additional visits for any emergencies or other problems
47 patients > 80 years of age at surgery

9 deceased by Nov 2015
Not included

38 patients
F/M 22/16
Age range years 80-87
Mean age 83

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5 Advanced Bionics
3 Cochlear
Medical events

• No life-threatening events during or immediately after surgery

• Thrombosis (leg), hematoma, pain, ulceration behind the ear, blindness due to retinal disorder 2 weeks postop, 1 case revision surgery (clips) due to electrode sliding, development of dementia, development of Parkinson's disease, development of neuropathy
Complications

- **Vertigo** during month 1-6 after surgery:
  - n=5 (13%) severe
  - n=6 (16%) mild→moderate
  - n= 24 (63%) no reports of vertigo
  - $\sum$29% displaying symptoms of vertigo (n=3 missing data)
  - 3 severe vertigo cases had Menièrès disease pre-operatively, 1 debut of Menière-like attacks after surgery
Complications continued

- Tinnitus: n=5 (13%) reports during follow up visits n=1 of those severe
- Chorda tympani n=2 (5%)
- Facial nerve no reported complications
Patient satisfaction

• Full time users: n=34 (89%)
• Part time users: n=4 (11%)
• Patients expressed that they were content or very content with CI: n=25 (66%)
• Patients expressed discontent with CI or ”not quite happy” with CI: n=7 (18%)
• Patients expressed that they were relatively happy with CI: n=5 (13%)
Speach audiometry results (word discrimination)

A majority of cases improved at 6-12 months after surgery. Speach audiometry resultat not always correlated with patient satisfaction. An individual with poor resultats could still be very satisfied and vice versa.
Prediction model- multiple logistic regression based on age and preoperative speech audiometry results (word discrimination tested with hearing aids)

_In cooperation with Marie-Louise Barrenäs, associate professor at the University Hospital in Umeå_

Elderly patients had a lower chance of gaining a 30% improvement as measured with speech audiometry than young or middle aged adults. The model is currently being developed and might be proved helpful in the future when consulting with elderly patients who are interested in CI surgery.
Bear in mind...

- Clinical review, no study design ahead of surgery, routine protocol for follow up

- Our octagenarians carefully selected, highly motivated

- We have not included and evaluated those who were not considered eligible for surgery or who declined
Conclusions

• Further evaluate this group, clinical studies with control groups
• Vestibular functions, cognitive functions and quality of life → better evaluation
• Invest more time in pedagogical efforts
• Close cooperation with your anesthesiologists, consider local anesthesia
• A majority did well after CI surgery and had a significant hearing gain