Medicolegal Audiology

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Noise-induced hearing loss

• Number of new claims per year = ~50,000
• Number of claims ongoing at any time = >80,000
• No sign of any exhaustion of claims
Why do medicolegal work?

- Extra income for self or department
- Challenge to knowledge and expertise
- Duty of professionals to assist Courts
Content of presentation

• Background
• Legal frameworks and remedies
• Considerations for an expert witness report in noise-induced hearing loss (NIHL) cases
Current context

- Moderate noise levels – 85-90 dB(A)
  - Long exposure periods (older claimants)
  - Small hearing losses (small claim for loss of amenity)
- Older claimants
  - Disentangling effects of age and noise
- Special damages (e.g. hearing aids)
  - Can overshadow claim for loss of amenity
  - Major component now of many claims
Routes for legal process

• Statutory
  – Legal offences
  – Regulations
  – Prosecution

• Common law
  – Torts (e.g. negligence)
  – Liability
  – Making a claim against someone
Statutory regulation and guidance

- Noise and the Worker (1963, 1969, 1971)
- Code of Practice (1972)
- Noise at Work Regulations (1989)
- Control of Noise at Work Regulations (2005)
Common law claims

- Often based on negligence
  - Based on conduct to be expected of a reasonable and prudent employer
  - Onus on claimant to prove his case (requiring burden of proof “on the balance of probability”)
  - Claimant must show
    - Damage has occurred and is causing some sort of loss (distress, loss of amenity, loss of earnings, special damages)
    - Damage was caused by defendant (causation)
    - Defendant was negligent (liability)
  - Claim must be brought within allowed time (usually within 3 years of knowledge that damage was caused by defendant – Statute of Limitations)
Nottinghamshire and Derbyshire Deafness Litigation

- Textile factories involved in “making-up” operations
  - Sewing machinists
  - Fully fashioned knitwear
  - Tights sewing and pressing

- Defendants
  - Courtaulds
  - Coates Paton
  - Martin Emprex
  - Guy Warwick

- Claimants (test cases)
  - 6 women and 1 man
  - Employed since 1970s, typically
Sewing
Sewing
Example audiogram
(female 67 yr)

Is this greater than expected just for age?
Causation

- Main principle is the “but for” test
- Is the claimant worse off than he or she would have been, but for the alleged negligent noise exposure?
- This involves an attempt to separate the noise damage from constitutional hearing loss (age-associated hearing loss - AAHL, other attributable hearing loss)
- Criterion is on the balance of probability
- Similar arguments apply for tinnitus
Guidelines


- Aim to codify a great deal of existing medical/scientific evidence into a route map for diagnosis

- Not intended to be a definitive recipe to deal with all eventualities – a scientific paper: not a legal document!
Outline of requirements of Guidelines

- Noise exposure
- Type of hearing impairment
- Mode of onset and progression
- Shape of audiogram
- Dip or “bulge” around 4 kHz
- Clinical picture
Case comparison with AAHL

Audiogram symbols

<table>
<thead>
<tr>
<th>Right</th>
<th>Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air conduction</td>
<td>O</td>
</tr>
<tr>
<td>Not-masked bone conduction</td>
<td>△</td>
</tr>
<tr>
<td>Masked bone conduction</td>
<td>□</td>
</tr>
</tbody>
</table>
Excessive hearing loss case

Audiogram 1

Excessive hearing loss case

Date of birth: 1 April 1941
Date of examination: 8 August 1994
Noise emission level: 104.6 dB(A)
Calculation formula: ISO1999
AAH L database: Database A: ISO 7029_otologically normal (ON)

Median and inter-quartile range

Median

Audiogram symbols

Right
Left

Air conduction
Non-masked bone conduction
Masked bone conduction

Frequency (Hz)

250 500 1000 2000 4000 8000

dB HL

0
20
40
60
80
100
120
Tinnitus

• Common (reasonable) view is that it probably has the same origins as any sensorineural hearing loss

• Essentially the causation is unknowable

• BUT: timing is important – US expert group and also VA tribunal in USA have held that there is lack of evidence to support delayed-onset NIHL or noise-induced tinnitus

• If tinnitus starts after noise exposure ends, in my view, they are not connected

• Contrary view from Prof Ross Coles in various textbook chapters (theoretical opinion – no evidence)
Treatment of noise-induced hearing loss

• Hearing aids

• Rule of thumb: Probable benefit when hearing thresholds (0.5-1-2-4-kHz average in better ear) exceed 30 dB

• Has the need for hearing aids occurred, or been brought forward, by the component of noise-induced hearing loss?

• What sort of hearing aids are required?

• What treatment is required for tinnitus?
Duties of experts

- Civil Procedure Rules Part 35
  - www.justice.gov.uk/civil/procrules_fin/contents/parts/part35.htm

- Over-riding duty is to the Court

- Express the full range of professional opinion, not just one side of the argument

- Signed statement:
  - I understand that my overriding duty is to assist the Court on matters within my expertise. I also understand that this duty overrides any obligation to the instructing parties or their clients. I confirm that I have complied with that duty and will continue to do so and that I am aware of the requirements set out in Part 35 of the Civil Procedures Rules and the accompanying Practice Direction, the Protocol for Instruction of Experts to give evidence in Civil Claims and the relevant Pre-action Practice Direction/Protocol.

  - I confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinion on the matters to which they refer.
Writing an expert report

- Follow guidance in CPR 35
- Start off with the 3 I’s
  - Instructions – what you were asked by solicitors to do
  - Identity – who you are and the nature of your expertise
  - Information – list of the information that you rely on in your report (e.g. previous medical reports or audiograms, witness statements, schedule of employment of claimant, hospital records)
- Describe evidence available, including your own measurements if applicable
- Discuss the evidence and reach an opinion, on the balance of probability
- Include the potential range of professional opinion and your degree of certainty
- Be explicit about any assumptions and references to other work
- Summarise opinion
- Signed statement according to CPR 35
Final comments

• Medicolegal audiology requires a high degree of precision, objectivity and evidence-based argument

• Current overall standard is quite poor

• Need for new blood that will help to raise standards

• Consideration needs to be given to audit and peer review, in order to improve standards