OMQ-20 questionnaire for otitis media in young children - Development and first clinical use in Sweden

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Introduction
Otitis media with effusion (OME) and recurrent acute otitis media (rAOM) are among the most common diseases affecting young children. Both forms are often treated with the insertion of ventilation tubes (VTs). Beside objective evaluation such as hearing impairment, investigating quality of life is of great interest. To be able to do this there is a need for established and validated questionnaires.

Background
Research first at UK MRC Institute of Hearing Research for a large randomised controlled trial (TARGET), then from Eurotitis-2 Study Group, has documented psychometrically the properties of a large pool of items on OME(1), its precursors and impacts. The large samples from these two studies enable empirical documentation of the best item selection and best scoring of measures for a range of purposes.

Various parent questionnaire products of this research and development work result from systematic reduction of the original 84 items. They vary in length and therefore also in reliability of the resulting score.

The OME-30 is derived from the original research and consists of 30 items supporting a profile of 6 descriptive facets with reference data on over 2000 cases.

The current OMQ-20 is a 20 item questionnaire, which is about the smallest set that can serve multiple purposes, supporting 6 factor-based facet scores. These cover: infection, nasal obstruction, recurrent acute otitis media, reported hearing difficulties, speech/language problems and developmental problems such as attention seeking behaviour.

Criterion validity of OMQ-20
This form of validity is limited, but the most widely understood. Where an accepted measure (usually more items) exists, another (usually shorter) can be judged an adequate representation of the first, whether the 2nd is a subset of the 1st or not, via their correlation coefficient. Table 1 shows that for totals OMQ-20 gives a good summary of the larger pool of items. There is also satisfactory criterion validity for those facet sub-scores where it is testable.

Conclusions
• OMQ-20 items administered as a medium-length self-standing questionnaire tap into much accumulated knowledge about the OM items and scores on very large samples, and offer a convenient yet comprehensive 6-D profile of disease and impact in OM.

OMQ-20 gives a good summary of item pool scores where it is testable.

• Early findings from first clinical use at two clinics in Sweden show that the Swedish sample seems to be only marginally more severely affected in general compared to the international sample. However, despite near-average measured hearing levels, Sweden shares with North West Europe higher reported impact on hearing, possibly a matter of greater parental awareness or longer histories than elsewhere. This could imply that Sweden use more of a watchful waiting approach to ventilation tube insertion compared to other countries.

• Compared to the international material OME was more dominant as cause for ventilation tube insertion. This is in line with newly published findings from the Swedish national quality register and adds to the image that the bar for VT insertion might be set higher in Sweden.

New Swedish sample
The Swedish translation of OMB-30 was done five years ago by three otolaryngology researchers. The subset of OMQ-20 items were re-checked and formatted. Recruitment is under way in cities Karlskrona and Karlskamm in southern Sweden. Figure 1 is the 1st and 3rd page of the actual OMQ-20 questionnaire. The questionnaire has proved easy to integrate into practice, with parents filling it in on arrival at the clinic. Background clinical and bio-data include: HL, tympanometry, age, sex, educational level of parent and diagnosis.

Results
So far 38 cases have been recruited out of the immediate goal of 100. One case was excluded due to too many (8) items missing. Thus there were 37 usable cases for questionnaire items, but only 34 for HL, a slightly higher rate of HL presence than in all Eurotitis. Figures 2 and 3 give the comparability of the Swedish sample to all Eurotitis-2 data.

The Swedish sample differed significantly from the Eurotitis sample in ear symptom score, obstruction (p < 0.01) and particularly in cognitive development (p = 0.0004). As shown in table 2 there was also a significantly greater proportion of OME in Swedish sample compared to other centres (p = 0.02).

Table 2: Percentage of sample receiving doctor diagnosis as OME, rAOM or combined

<table>
<thead>
<tr>
<th></th>
<th>Eurotitis</th>
<th>Sweden</th>
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<tbody>
<tr>
<td>OME</td>
<td>23</td>
<td>64</td>
</tr>
<tr>
<td>RAOM</td>
<td>12</td>
<td>8</td>
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Table 2: Percentage of sample receiving doctor diagnosis as OME, rAOM or combined

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