The first UK NOE Collaborative meeting took place on the 21st November 2019 at St. Peter's College, Oxford.

The aim of the meeting was to discuss the UK NOE Collaborative Delphi process to date and to carry out a third round of the Delphi survey, continuing work on the definition for definite, probable, relapse, severe cases and agreeing indications for imaging.

Presentations

The programme started with an informative presentation by Professor Martin McNally, Head of Limb Reconstruction, Oxford. He presented two previous Delphi processes for case definition development with which he had been involved: fracture related infections and prosthetic joint infections. Both of these processes involved groups of international collaborators and required an extended, iterative process to resolve. The notable difference for these conditions compared to NOE, was the existence of published data to inform the process. Whilst the challenges of the method were undeniable, the benefit of being able to agree guidelines and plan studies based on widely agreed definitions was evident.

Dr Pieter Pretorius, Consultant Neuroradiologist, Oxford provided clear succinct insights into the advantages and disadvantages of different scanning modalities and illustrated the difficulties of making a radiological diagnosis of NOE. A discussion followed on what modality should be used to follow cases and diagnose relapsed cases. MRI and CT are widely used, however the usefulness of other modalities including gallium scans and PET scans have yet to be shown.

Ms Maha Khan, ENT Specialist Registrar, Manchester presented an overview of the principles of the Delphi process, the rationale for the questions used to date in the NOE Delphi process and results from Round 2.

Dr Susanne Hodgson, Academic Clinical Lecturer in Infection, Oxford presented the proposed NITCAR prospective study protocol. The discussion focussed on whether definite cases or definite and possible cases of NOE should be included in the study design. The choice between a thorough research study and a more limited national service evaluation was also reviewed and the group were in favour of a definitive study. Discusssions are ongoing with INTEGRATE and it is hoped that this study will prove to be a successful collaborative effort between the two groups.

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Delphi Process Discussion

The discussion of case definitions was the main focus for the day. This session was facilitated by Professor McNally and Ms Emma Stapleton, ENT Consultant, Manchester. During the first half of the session the discussion was left open to allow attendees to discuss a range of the different aspects of NOE. The second half of the discussion was more focussed, in order to address items from Round 2 of the Delphi Process which had not yet reached consensus.

It was agreed that the term 'malignant otitis externa' should not be used. It was pointed out that the term 'necrotising otitis externa' is not accurate due to the absence of true necrosis. This point was discussed and it was agreed that although a misnomer, there was no support for a proposal to rename the condition.

The chronology of symptoms was raised and it was agreed that whilst otalgia and otorrhoea had met consensus as essential features for a clinical diagnosis of NOE, the otorrhoea may have subsided by the time a diagnosis of NOE was made. It was therefore agreed that clinical diagnosis of NOE requires the inclusion of the phrase 'or a history of recent otorrhoea'. The group agreed that adding minimum durations of symptoms/signs prior to imaging or escalation of treatment would be important in defining an investigative algorithm. Professor McNally's past experience advised against pursuing the suggestion of a scoring system for predicting the liklihood of a case from a consellation of findings.

There was discussion about the meaning of the term 'probable NOE'. Professor McNally supported the concept of having a term to define those cases which may not fulfil all the criteria for a definite case. It was agreed that the term 'possible NOE' might be a more appropriate term to define these cases.

It was agreed that CT is the intial imaging modality of choice, and if normal in the presence of a clinical suspicion of NOE, it would be reasonable proceed to MRI. The need to explore the role of gallium/SPECT/labeled scans was repeatedly raised and agreed that data is needed to inform the role of each of these modalities.

It was agreed that non-response is defined as no reduction in symptoms after two weeks of effective therapy; relapse involves worsening of symptoms or signs following a period of improvement, and a list of features indicating severe NOE had previously met consensus. Relapse, non response and severe infection were difficult to clearly define and for future clarity, will benefit from wider consultation addressing specific questions around timing of diagnosis, role of histology/laboratory markers and imaging modality. It was acknowledged that there is little data to support these definitions other than expert opinion, and that there should be a careful review once the evidence becomes available.

INTEGRATE are currently undertaking a Delphi process to establish a case definition for otitis externa. It was acknowledged that this process, once completed should link to and inform the Delphi process for NOE so that the definitions from these two processes will reflect the continuum of disease.

It was agreed that a definite case of NOE has a history of otalgia and otorrhoea with evidence of unequivocal bone erosion on CT. It was agreed that this condition is most likely in an elderly frail, diabetic or otherwise immunocompromised person.
It was agreed that a MDT approach including ENT, radiology and infection specialists should be promoted.

Conclusion
The aims for the day were ambitious and although clear definitions of all conditions were not agreed, important progress was made. Consensus definitions were reviewed and supported and the direction of the next round of the Delphi process was agreed. Important decisions were made regarding design of the planned, national prospective study. Perhaps most importantly, the network was strengthened with great enthusiasm and clear commitment to support future work.

Next steps
The definitions agreed at this meeting will be circulated in another round in the Delphi process to the UK NOE Collaborative email group. Once consensus is reached, the agreed definitions will be circulated more widely through the supporting organisations including BIA, BSO, ENT UK and BSAC for wider consultation before these are finally agreed. Members will be invited to participate as contributing sites in the planned prospective national study of the epidemiology, risk factors, management and outcomes.

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