УДК 616.21+616.28-008.14+616.28-073.44 DIFFERENTIAL STUDY BETWEEN ENDOSCOPY AND TYMPANOGRAPHY OF PATIENTS WITH ACUTE PATHOLOGIES OF THE MIDDLE EAR

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Abstract. The tympanic membrane (TM) undergoes a number of pathological changes in middle ear disease which can be detected by a video-otoendoscope. Middle ear disease is also accompanied by changes in middle ear pressure which can be assessed by tympanometry. The objectives of this study were to find the correlation between video-otoendoscopy and tympanometry in acute middle ear infections and to deduce which of the two is more efficient and reliable for early diagnosis. 75 patients with AOM or OME were included over 1 year where each patient was followed for 21 days. Detailed history and clinical exam- ination with videootoendoscope and tympanometry was done on each visit. Each TM was graded using OMGRADE scale. Symptoms and clinical findings consistent with acute otitis media were given a clinical score (CO Score). The results were collected and correlation between video-otoendoscopy and tympanometry was determined and their individual sensitivity, specificity and diagnostic accuracy was calculated. The sensitivity, specificity and diagnostic accuracy for tympanometry and video-otoendoscopy was calculated individually for each of the 4 visits and positive correlation between the 2 was found. Our study showed that tympanometry had a higher overall sensitivity than video-otoendoscopy. While, videootoendoscopy showed a higher specificity than Tympa nometry. Otoendoscopy is good for ruling out AOM/OME but cannot rule out persisting Middle Ear Effusion and Tympanometry is a better tool for detecting MEE but cannot differentiate well between AOM and OME.

We found that tympanometry plus otoendoscopy together greatly increase the chances of detecting AOM and OME thus improving diagnostic accuracy, reducing financial costs associated with over or misdiagnosis.

Aim of the study : explore the combination of tympanometry with endoscopy to improve diagnostic accuracy and reduce financial costs.



Methods

This prospective study was conducted in a <<Bukhara Lor Center >>Bukhara city Uzbekistan from September 2021 to 2022. 75 patients were examined who were selected from the population visiting the ENT Outpatient Department. Patients included were between the age of 5–18 years, with signs (redness, bulging of TM) and symptoms (fever, tugging, irritability or pain) corresponding with AOM or OME without any complications and no history of ear trauma or ear surgery. Detailed clinical history was taken and examination was done using video-otoendoscopy followed by tympanometry.

Conclusion

We used both tympanometry as well as video-otoen- doscopy to the assess the tympanic membrane and the condition of the middle ear and used a Clinical Score for diagnosing AOM or OME as standard.

Pain /irritability was the most common presenting complaint followed by tugging and fever. This correlated well with studies performed by Niemela et al. and Rothman et al. according to whom earache was present in majority of the patients of AOM and also the most useful symptom for diagnosis. The most common sign among the patients was redness of the TM followed by bulging of the TM. However Karma et al. and McCormick et al. found bulging of the TM had higher specificity (97%) while redness of the TM only correlated with the presence of AOM.

In our study TM's were graded on the basis of OM Grade using an otoendoscope which showed a sensitivity of 94.67% and PPV 100% on the 1st visit. A sensitivity of 92.31%, specificity of 48.48%, PPV 67.92% and NPV 84.21% on the 2nd visit. On the 3rd visit we found

