

JAAA CEU Program

Volume 31, Number 7 (July/August 2020)

Questions refer to Aithal et al, "Predictive Accuracy of Wideband Absorbance at Ambient and Tympanometric Peak Pressure Conditions in Identifying Children with Surgically Confirmed Otitis Media with Effusion," XXX-XXX.

Learner Outcomes:

Readers of this article should be able to:

- Understand the pattern of wideband absorbance (WBA) measured at ambient pressure (WBA_A) and tympanometric peak pressure (TPP) (WBA_{TPP}).
- Consider the potential application of compensation of middle-ear pressure effects in the diagnosis of otitis media with effusion (OME).

CEU Questions:

- The literature has shown that early-onset and long-lasting otitis media in children:
 - Has no impact on children's speech and language development, hearing, and education.
 - Has impact on children's speech and language development, hearing, and education.
 - Has impact only on hearing.
- Wideband absorbance (WBA) is defined as:
 - The ratio of energy absorbed by the middle ear to incident acoustic energy supplied by the probe receiver.
 - The difference in energy reflected by the middle ear to incident acoustic energy supplied by the probe receiver.
 - The ratio of energy reflected by the middle ear to incident acoustic energy supplied by the probe receiver.
- It is advantageous to assess middle-ear function at TPP using WBA because:
 - Measuring WBA at TPP will reduce the middle-ear pressure effects and measure changes in absorbance due to middle-ear pathology per se.
 - Measuring WBA at TPP will increase the middle-ear pressure effects and measure changes in absorbance due to middle-ear pathology per se.
 - Measuring WBA at TPP will mask the middle-ear pressure effects and measure changes in absorbance due to middle-ear pathology per se.
- In the present study, measurements were obtained by recording acoustic responses to clicks presented at:
 - 85 dB SPL
 - 100 dB SPL
 - 55 dB SPL
- TPP was measured in this study by:
 - Calculating the pressure at which the maximum of low-frequency averaged absorbance between 0.376 and 2 kHz occurred.
 - Calculating the pressure at which the maximum of low-frequency averaged absorbance between 0.250 and 8 kHz occurred.
 - Using the TPP results from 226 Hz tympanometry.
- The results in Figure 2 illustrate that mean WBA_A for the control and OME groups showed:
 - A single peak at 3 kHz
 - No peaks
 - Two large peaks, with the first peak at 1.25–1.5 kHz and second peak at 3 kHz
- The results in Figure 2 illustrate that mean WBA_{TPP} for the control group showed:
 - A single peak at 3 kHz
 - No peaks
 - Two peaks, with the first peak at 1.25–1.5 kHz and second peak at 3 kHz
- Mean WBA_A and WBA_{TPP} results obtained from thick and thin OME fluid during surgery were compared in this study (Figure 6). Although mean WBA_A results were similar, mean WBA_{TPP} obtained for thin fluid was:
 - Lower than thick fluid
 - Higher than thick fluid
 - No different than thick fluid
- In the present study for definite cases of OME as confirmed by surgery, the predictive accuracy of WBA_A and WBA_{TPP} when compared to Y_{tm} of 226-Hz tympanometry was (Table 5):
 - Significantly different
 - Not determined
 - Not significantly different
- Overall, the present study showed that the predictive accuracy of WBA_{TPP} across 0.3 to 6 kHz when compared to that of WBA_A was:
 - The same
 - Better
 - Worse



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