

Meniere's disease (MD) is an inner ear disorder characterized by sudden episodes of vertigo associated with tinnitus and pressure in the affected ear. Fluctuating hearing loss in the earlier stages typically leads to a permanent hearing deficit with a moderate-to-severe disability. The aim of this study was to analyze the electrocochleography (EcoG) findings and their correlation with other audiological tests in patients with definite MD. ENT examination, clinical history, pure tone audiometry (PTA) and extratympanic ECoG evaluations were performed in 30 patients with unilateral definite MD and ten healthy adults. The ECOG record of a 45 years old MD patient has been showed at Figure 1.

Figure 1: The ECOG records of a patient with MD

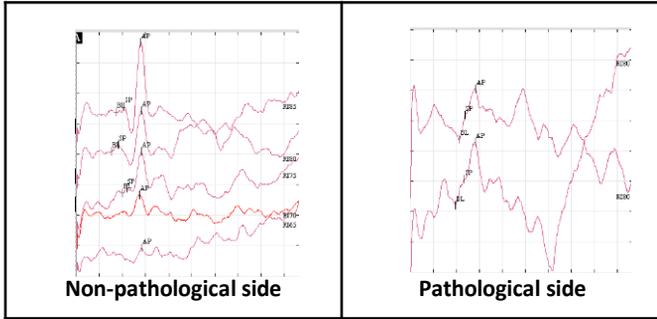
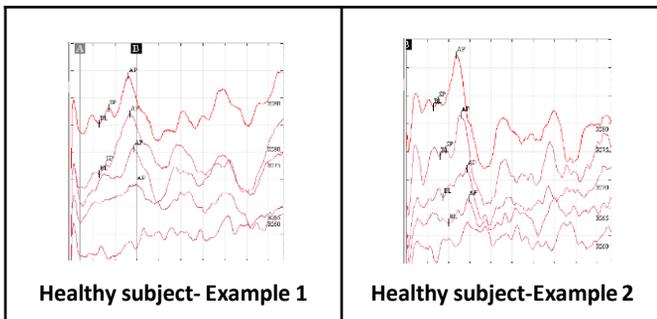


Figure 2: The ECOG records of two healthy adults



Thirteen patients were male, 17 were female and the mean age was 47.05 ± 12.5 years. The relationship between the summing potential to action potential (SP/AP) ratios and other ECOG and audiometric parameters were evaluated statistically (Table 1).

Table 1: The ECOG and PTA findings of all subjects

	Pathological side of MD patients	Non-pathological side of MD patients	Healthy subjects
0.5-2kHz mean (PTA1)	48,7±22,2	15,8±14,1	12,3±10,1
1-4kHz mean (PTA2)	47,9±23,7	16,3±14,05	10,5±10,4
0.5-3kHz mean	48,6±21,5	15,2±14,1	12,1±10
AP latency	1,2±,55	1,3±,32	1,3±,1
SP latency	,84±,4	,9±,2	,9±,1
BL latency	,6±,3	,8±,1	,7±,1
AP-BL amplitude	,3±,1	,5±,2	,6±,2
SP-BL amplitude	,2±,1	,2±,1	,2±,1
SP/AP ratio	46,6±27,9	40,7±21,2	26,3±9,7
SP/AP abnormality (≥%40)	23 ears	11 ears	2 ears

ECOG parameters of all subjects were compared each other. Except SP/AP ratios, other parameters did not show significant difference neither between pathological-nonpathological sides nor MD-healthy subjects ($p>0.05$). Abnormal SP/AP ratios both of the pathological and non pathological side of MD were significantly higher than healthy subjects ($p<0.05$). In MD patients SP/AP ratios did not show significantly difference between pathological and non-pathological side ($p>0.05$).

On the other hand, the sensitivity, specificity, positive and negative likelihood ratios of ECOG were calculated (Table 2).

Table 2: Sensitivity, specificity and likelihood ratios of ECOG

ECOG	Ratios
Sensitivity	76%
Specifity	90%
Positive likelihood	7.6 (moderate level)
Negative likelihood	0.26 (small level)

According to these findings, ECOG is a valuable part of the diagnostic tool in the diagnosis of hydrops, as it is a non-invasive, easy to handle procedure.