

Middle ear fluid in patients with cleft palate and level of hyluronic acid

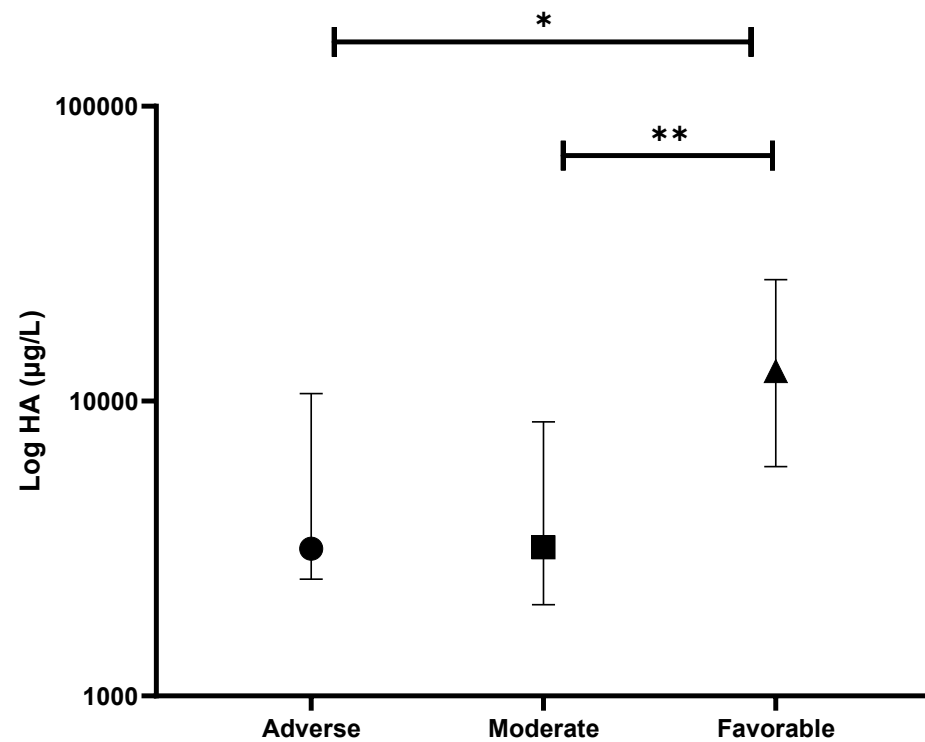
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Background: Patients with cleft palate have severely impaired function of the Eustachian tube. The result in almost all of them is the development of secretory otitis. The aim of the study was to investigate hyaluronic acid (HA) levels in middle ear fluid in newborns in relation to the course of the disease.

Methods: Hyaluronic acid was examined in middle ear fluid of 65 children subjected to cleft lip surgery in neonatal period. Patients were divided into 3 groups according to the course of the disease (Favorable without further occurrence of the secret, Moderate – one surgical intervention is needed to withdraw the selection, Adverse – secretion had to be aspirated more than once and tympanosomy was performed). Hyaluronic acid levels were determined by immunoassay kit TECO Hyaluronic acid PLUS ELISA.



Graph No 1. Hyaluronic acid concentrations in middle ear fluid of newborns with cleft lip and palate. Samples were taken during lip surgery and the results were related to each group.

Results: The concentrations of Hyaluronic acid in the middle ear fluid were as follows (mean± SEM): Favorable course: 14253±2393 µg/L, Moderate course: 7503±1345 µg/L, Adverse course: 5905±2393 µg/L. The differences of HA values in middle ear fluid were significant. The differences of HA values were significant. Patients with adverse and moderate course had significantly decreased hyaluronic acid levels in middle ear fluid compared to patients with favorable course (P=0.02 and P=0.0018)



Fig.No 1. Before surgery and 8 months after surgery

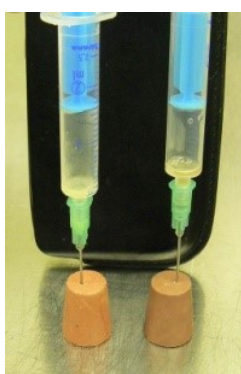
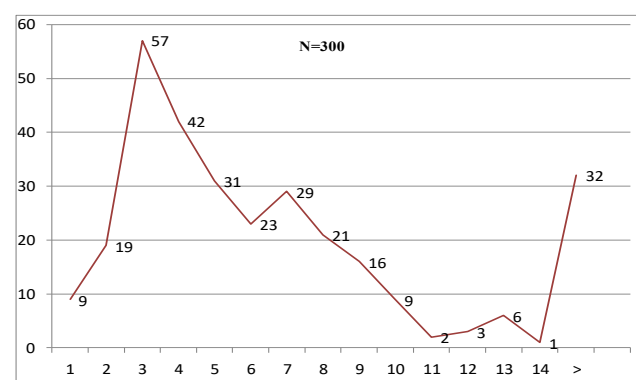
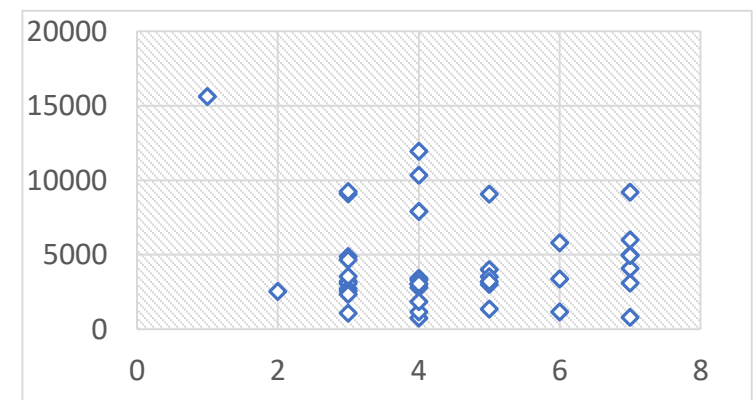


Fig.No 2. Middle ears effusion, newborn at the age of two days



Graph No 2. Age at the time of surgery (days)



Graph No 3. Hyaluronic acid levels in µg/L and sample distribution according to patient age at time of collection (days).

Conclusion: Hyaluronic acid concentrations in middle ear fluid of newborns with cleft palate are related to the course of the disease and lowest values are most frequent in patients with adverse course.

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