**Abstract:**

**Introduction:** Obstructive and inflammatory diseases of tonsils are considered as the most common disorders of childhood. Fatty acids and most of its biological activities have been attributed to its capacity to generate biologically active lipids, which may sustain inflammation. They have been proposed as evaluating markers for infection and inflammation in tonsils. The aim of this study was to investigate the tonsillar fatty acid composition in pediatric cases undergoing tonsillectomy.

**Method:** The study of population included 205 children who had undergone tonsillectomy. Tonsil tissue samples fixed and were examined by making and preparation of pathology slides, 114 had hyperplasia and 91 chronic tonsillitis. On the other hand, tonsillar lipids were extracted and fatty acids analyzed by gas liquid chromatography. At last, they were compared with pathological evaluation.

**Results:** Palmitoleic, oleic and monounsaturated fatty acids were associated with chronic tonsillitis and saturated fatty acid stearic acid were higher than in tonsillar hyperplasia (P < 0.01).

**Conclusions:** According to the results of this study, tonsillar fatty acids composition was various in two cases of recurrent tonsillitis and tonsillar hyperplasia. Then, they have an important biochemical role in tonsillar disorders and may be considered as supportive diagnostic markers to differentiation of two groups.

**Keywords:** Tonsillar disorders, Tonsillitis, Tonsillar hyperplasia, Fatty acids composition, Children

**Presentation:** Poster