

## **Quantitative evaluation of CRP and IL-6 in patients with acute appendicitis and its role in preventing Negative Appendectomy**

### **Abstract**

**Background:** Acute appendicitis is one of the most common causes of abdominal surgery in any age group and is the most common misdiagnosis, which leads to unnecessary surgery (negative appendectomy)

**Objective:** To determine the relationship between the quantitative amount of quantitative CRP markers and IL-6 with the degree of appendicitis in patients with acute appendicitis diagnosis to prevent negative appendectomy.

**Materials & Methods:** 208 patients who referred to the emergency department of Ardabil Fatemi Hospital for a specific period due to acute abdomen and underwent open appendectomy due to acute appendicitis, underwent quantitative CRP and IL-6 surgery before surgery. It was evaluated in a laboratory and the numerical values of this study were analyzed based on the pathology results of the removed appendix.

**Results:** The mean age of the positive group (having appendicitis based on pathology result) was 22.6 and the negative age group (no appendicitis based on pathology result) was 24.2, which showed a significant difference in whether the pathology result was positive or negative in terms of criteria. There is no appendicitis and age of patients. In this study, the mean age of men was 23.1 years and the mean age of women was 22.4 years, which showed that there was no significant difference in age distribution by gender in patients.

Sexual distribution of patients according to pathology outcome, in patients whose pathology result did not indicate appendicitis (negative group), in men 2.4 % (n = 5), in women 6.25 % (n = 13) and in patients with appendicitis pathology (The positive group was 53.84 % (n = 112) in men and 37.5 % (n = 78) in women, which was shown to be significantly more negative appendectomy in women.

Analyzes showed that interleukin 6 levels were not normally distributed among patients, so the two groups were significantly different in terms of interleukin 6, so the study hypothesis that this marker is different in both positive and negative groups was confirmed. The mean of quantitative CRP level in the negative group was 11.1 and the mean level of quantitative CRP in the positive group was 35.5, which showed that there was a significant difference between the positive and negative groups in terms of quantitative CRP level.

This study also showed that there was a significant difference in the level of quantitative CRP and IL-6 with the degree of inflammation and gangrene. Therefore, quantitative CRP > 14.9 and IL - 6 > 7.1 were determined as the criteria for surgery.

**Conclusion:** The amount of quantitative CRP and IL-6 is reliably higher in patients with acute and complicated appendicitis than in patients with negative appendicitis and with 95% confidence for small CRP 14.9 and with 95% confidence for IL - 6 1/7 was determined.

**Keywords:** Appendectomy, IL - 6, Quantitative CRP, Negative appendectomy