

Republic of Iraq
Ministry of Higher Education & Scientific Research
University of Baghdad
College of Dentistry



Evaluation of the serum level of the interleukin-6 in patients undergoing surgical removal of impacted mandibular third molars

A thesis

Submitted to the council of the College of Dentistry at the University of Baghdad, in partial fulfillment of requirements for the Degree of Master of Science in Oral and Maxillofacial Surgery

Submitted by

Hussein Ahmed Taher

B.D.S.

Supervised by

Prof. Dr. Salwan Y. Bede

B.D.S., F.I.B.M.S.

2020 A.D.

1441 A.H.

Abstract

Background:

The surgical removal of impacted mandibular third molars produces a significant degree of tissue trauma that causes an inflammatory reaction. Cytokines are small secreted proteins which mediate and regulate immunity, inflammation, and hematopoiesis.

Aim: The aim of this study is to evaluate the changes in the serum levels of interleukin-6 (IL-6) after impacted third molar surgery and its relation with the degree of the operative difficulty.

Materials and methods: This prospective cohort study included patients who underwent surgical extraction of impacted mandibular third molar. Two blood samples were drawn from the patients; one before the operation and the second 48 hours (hrs.) postoperatively. The serum IL-6 levels were measured using the enzyme-linked immunosorbent assay (ELISA) and the differences between the pre- and postoperative levels were assessed and correlated with the difficulty of surgical extraction determined by duration and technique of surgery and other variables: age, gender, indication of extraction, classification of impaction and difficulty of surgical extraction.

Results: Thirty nine patients were included: 12 males and 27 females. The level of IL-6 increased significantly following surgery in comparison with the level before operation, but there was no correlation between the change in the level of IL-6 pre and postoperatively with other variables namely; age, gender, indication of extraction, classification of impaction and difficulty of surgical extraction.

Conclusions: After surgical extraction of impacted mandibular third molar, there was a significant increase in IL-6 serum levels that does not correlate with the difficulty of surgical extraction and the other investigated variables.

Keywords: IL-6, impacted third molars, surgical difficulty