

5th International Conference and Exhibition on

PAIN RESEARCH AND MANAGEMENT

October 05-06, 2017 London, UK

Effect of ibuprofen and metamizole administration on leukocyte/granulocyte counts and renal function in surgical patients in an oral and maxillofacial surgery department: A retrospective study

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Statement of the Problem: The long-term use of ibuprofen and metamizole, drugs prescribed as first line treatment for patients with mild to moderate pain (Numerical Rating Scale, NRS 1-5), was suspected to affect renal function and leukocytes/granulocytes counts when administered to surgical patients. The purpose of this study is to present possible alterations of leukocyte/granulocyte counts and renal function in surgical patients that postoperatively received ibuprofen and/or metamizole for analgesic treatment.

Methodology & Theoretical Orientation: 180 patients that had a surgical intervention at our department in the last 6 months and received ibuprofen and/or metamizole postoperatively have been included in the study. For each patient the values of the leuko- and granulocyte count, as well as of the glomerular filtration rate (GFR) and the creatinine (in blood) value at admission and at discharge were selected. Specifically, following exclusion criteria have been selected: patients 1. under 18 years, 2. with chronic pain syndromes, 3. with a glomerular filtration rate (GFR) below 60 ml/min, 4. with a history of chemotherapy or preoperatively documented granulocytopenia, and 5. those with an acute or chronic inflammation. The data were analyzed by means of an exploratory data analysis as well as of Wilcoxon test (SPSS, $p < 0.05$).

Conclusion & Significance: The renal function values (creatinine in blood, GFR) as well as the counts of leukocyte and granulocytes showed no statistically significant difference when postoperative and preoperative values were compared. Additionally, no differences could be found after patient division in two age groups (younger and older than 50 years).

The postoperative administration of ibuprofen and metamizole, alone or in combination, is safe for acute postoperative pain management in patients without preexisting renal function impairment and normal leukocyte and granulocyte count.

Biography

Dietrich Eva Maria is a Trainee at the Department of Oral- and Maxillofacial Surgery at the University Hospital of Erlangen in Erlangen, Germany. She has her expertise in evaluation of patients' pain perception and of diagnose-specific pain characteristics and treatment needs, as well as in improvement of acute postoperative pain by offering an individualized analgesic treatment adaptation. Her scientific orientation also includes microvascular reconstructions and oral cancer in oral and maxillofacial surgery.

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