

(ABO) are lacking in Africa and specifically in Algeria. Our study aims to assess its characteristics and to estimate its prevalence in a cohort of an asthmatic population. Medical records of asthmatics attending the pulmonology department of the public health center of Azazga city (Algeria), were retrospectively analyzed. Data about clinical characteristics, exacerbation, ICU and hospital admission were extracted. Chi-squared test was used to assess the links between categorical variables, and Student-t test to compare means. Data analysis was performed using SPSS. Of the 203 included patients, 83 (40.9%) were males, and the mean age was 51.87 ± 16.56 years. ABO was found in 11 patients with a prevalence of 5.4%, however, no significant differences were found in sex ratio, smoking status, comorbidities or symptoms ($p > 0.05$). Interestingly, pulmonary fibrosis was more important (67%) in the ABO group ($p < 0.001$) but not allergy (3%, $p = 0.047$). The treatment was similar between the two groups, including inhaled corticosteroids, short- and long-acting beta agonists, or leukotriene receptor antagonists ($p > 0.05$). Moreover, respiratory infections were linked with more exacerbations in ABO group ($p = 0.036$). Bronchiectasis diagnosis in patients with asthma is a key for providing an adequate management to better control symptoms, exacerbations and/or infections.

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Tear pharmacokinetics and systemic exposure of dexamethasone canaliculi inserts in rabbits

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A dexamethasone canaliculi insert, Dextenza®, has been used to treat anterior inflammation of the eye, including keratoconjunctivitis sicca. This study aimed to investigate the tear pharmacokinetics and systemic exposure of dexamethasone in New Zealand White rabbits after inserting the preparation into the punctum and to correlate the data with the *in vitro* dissolution test. Dextenza was inserted into the punctum of rabbits. A paper strip serially collected tears, and dexamethasone concentrations in tears and plasma were measured using HPLC-MS/MS. The time courses of tear and plasma dexamethasone concentrations were characterized. The release of dexamethasone from the insert to tears in rabbits was completed in ~5 days, much faster than in humans and dogs (30 days). The time course of plasma dexamethasone concentration was fully characterized, in contrast to the fact that systemic exposure was merely observed in the other species. The present results might be attributed to the anatomical structure of the lacrimal sac beneath rabbits' canaliculi. The *in vitro* dissolution pattern represented an excellent correlation with the *in vivo* release in tears. We first examined the pharmacokinetic study of canaliculi insert in rabbits, which could be applied to the other insert studies in the species. *The authors marked with an asterisk equally contributed to the work.

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The systemic immuno inflammation index (SII) as a biomarker for predicting the severity of acute appendicitis

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Acute appendicitis (AA) is the main cause of acute abdominal pain. Despite the classic symptoms, early identification can sometimes be difficult. Several scoring systems have been developed to improve the diagnosis of AA; however, they are unable to distinguish between simple and complicated appendicitis. The systemic inflammation index (SII) is a new biomarker based on platelet, neutrophil and lymphocyte counts. The aim of this study was to investigate the role of the SII in predicting the severity of acute appendicitis in adults. This was a retrospective study of 202 patients with AA. According to the Alvarado score, the study population was divided into two categories: uncomplicated (UAA, $n = 100$) and complicated (CAA, $n = 102$). Biological tests were performed, including complete blood count (CBC), SII (platelets $\times$ neutrophils/lymphocytes), platelet-lymphocyte ratio (PLR), neutrophil-lymphocyte ratio (NLR), biochemical and coagulation tests. SII rates in patients with CAA were significantly higher than in those with UAA. SII had the highest discriminatory capacity for determining CAA compared with other biological parameters (AUC = 0.694). Multivariate logistic regression analysis of factors affecting the diagnosis of CAA showed that the SII, NLR, PLR and CRP were statistically significant. Analysis of the correlation between the biomarkers SII and the ALVARADO score showed significantly positive correlations. A severity score was developed from the clinical and biological variables that were significant. The variables related to the factors possibly associated with the severity of acute appendicitis were obtained. Multivariate regression analysis was performed. Final score points were assigned according to the values of the regression coefficient. This model showed high discriminatory capacity to differentiate CAA from UAA with an AUC of 0.857. Our results highlight the value of SII as a promising and easily available biomarker that can be used to assess the severity of AA.

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Therapeutic potential of isolated mitochondrial transplantation derived from adipose stem cell spheres for immunomodulation and tissue repair

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Mitochondria, essential for regenerative capabilities, provide the necessary energy for cell function. Previously, we observed that chitosan-induced adipose-derived stem cell (ASC) spheres exhibit a unique and compact mitochondrial morphology characterized by densely packed cristae, enhanced mitochondrial activity, and increased ATP production. Epigenetic modification of H3K27me3 and the involvement of PPAR γ were identified and