

*Prevalence of Taurodontism in Contemporary and Historical Populations from Radom:*

*A Biometric Analysis of Radiological Data*

Streszczenie w języku angielskim

Summary in English

## INTRODUCTION

Taurodontism is a morphological anomaly of multi-rooted molars characterized by apical displacement of the bottom of the pulp chamber, shortening of the roots and lack of narrowing at the enamel-dentin border. It can significantly influence the outcome of planned dental treatment at every stage of its implementation, which should encourage the clinician to conduct a thorough biometric analysis of available imaging tests.

## OBJECTIVE

The aim of the study is to review the available literature on the clinical implications of taurodontism and to compare the frequency of this anomaly among historical individuals and the contemporary adult population from Radom and the surrounding area.

## MATERIAL AND METHODS

The review papers, a review of the literature available in the PubMed database from 2005 to 2022 was performed using the keyword "taurodontism". The study of historical materials was carried out on the basis of dental X-rays from individuals from the 11th to the 19th centuries (n=600), taken using a portable intraoral X-ray device. The assessment of the frequency of the defect in contemporary patients was based on biometric analyzes of panoramic radiographs (n=2198). The basis for the diagnosis of anomalies was the Shiffman and Chanannel taurodontic index.

## RESULTS

Review studies have shown the importance of diagnosing taurodontism before undertaking comprehensive dental treatment. Based on original works, it was shown that the highest percentage of taurodontism was observed in individuals from the 18th and 19th centuries (138/444, 31%), while in the 11th/12th and 14th/17th centuries, the incidence of this defect was significantly lower (26/120, 22% and 12/76, 16%, respectively). In contemporary patients, anomalies were recorded in approximately 34% of all teeth examined (750/2198). In historical individuals, this anomaly affected most often the second and third upper molars and least often the second and first lower molars. Also in contemporary patients, the highest level of taurodontism was found among the upper second and third molars. The lowest incidence of taurodontism occurred in the lower first and second molars. In each analyzed period, the most hypotaurodonts were observed, and the least hypertaurodonts were observed.

## CONCLUSIONS

There are many clinical implications of a diagnosis of taurodontism, and diagnosing the condition before starting treatment can be crucial to its success. The incidence of taurodontism has been increasing over the centuries, which can have significant clinical implications, such as increased risk of complications during dental or surgical procedures.