

Benedikta Palesik
Paulina Grigaravičiūtė
Prof. dr. Kristina Lopatienė

INTRODUCTION

Dermatoglyphics and craniofacial structures form from the same embryonic tissues (ectoderm) during the same embryonic period (the dermatoglyphics form in the sixth week of pregnancy, dental development begins in the sixth week of intrauterine life). Thus, this might indicate a possible association between fingerprints and malocclusions, leading to earlier initiation of prophylactic treatment and possible development of lesser form or overall avoided orthodontic anomaly.

METHODS

Systematic review was conducted in compliance with PRISMA requirements. An electronic search with keywords: “fingerprints”, “finger marks”, “dermatoglyphics”, “finger pattern”, “occlusion”, “malocclusion”, “Angle class”, “orthodontic” was performed up to February 3, 2022 in PubMed, Science Direct, Wiley Online Library, The Cochrane Library, Medline. The inclusion criteria were: full text, clinical trials with humans, written in English language, randomized controlled studies, prospective and retrospective studies published from 2012 to 2022, studies that assessed the relationship between fingerprints and orthodontic malocclusion.

The articles were included with the consent of 2 authors, if opinions differed, the final decision was made by the third.

CONCLUSIONS

Most of studies showed that the need for prophylactic treatment at an early age can be determined by the type of fingerprint, as there is a significant association between fingerprints and the type of malocclusion. The difference found between the type of fingerprints and the malocclusion could be due to the fact that the studies were carried out in different countries.

AIM

To evaluate relationship between orthodontic malocclusion, fingers pattern and preventative treatment need.

RESULTS

After initial search in electronic databases 639 articles were displayed, after duplicate removal 311 were left, after applying selection criteria 13 articles were included in this review.

In all studies 2216 patients were included, age between 6-40.

Fingerprints were recorded using graphite powder [2], ink and roller method [3,5-8,10-11,13], fingerprint scanner [1,4,9,12].

Patients were divided into two [6,10], three [1-2,4,6,10-11,], four [3,8,12-13] or six groups [7] according to Angle's classification. In two studies, slight differences in fingerprints of different malocclusions were found ($p>0,05$) [1-2]; nine studies showed significant difference in some fingerprints of different malocclusions [3-11]; two studies showed statistically significant difference in all three groups of malocclusion [12-13].

In an ideal I class occlusion most common fingerprints found are arch form [9-10] or loop [4,13] ($p<0,05$). In I class malocclusion-arch form [5,11-12] or whorl [8,11,13] ($p<0,05$). In II class malocclusion-whorl form [4,6-7,12] or loop [3,10-11,13] ($p<0,05$). In III class malocclusion-loop form [3,5,7-8,12] or arch [6,13] ($p<0,05$). Better part of analyzed studies concluded possible indicated need for early prophylactics or orthodontic treatment based on fingerprint types [3-13].