Sympathomimetic effects of chronic methamphetamine abuse on oral health: a cross-sectional study.

Abstract:
Methamphetamine, a highly addictive sympathomimetic stimulant, is currently widely abused worldwide and has been associated with devastating effects on oral health, resulting in the term "meth mouth". However, "meth mouth" pathology is primarily based on case reports with a lack of systematic clinical evaluation. Therefore, we have conducted a systematic study to investigate (1) the pharmacological impact of methamphetamine on oral health with regard to saliva function, including the parameters saliva flow rate and total saliva production (ml/5 min) and the buffering capacity of saliva; (2) the contribution of the symptoms of bruxism and muscle trismus to potential oral health damage. We assessed the data of 100 chronic methamphetamine abusers and 100 matched-pair comparison participants. Primarily, we conducted an anamnesis with all methamphetamine abusers with regard to saliva dysfunctions, jaw clenching and pain in the temporomandibular joint. Subsequently, in the first part of the clinical enquiry, we tested the saliva flow rate and the total saliva production (ml/5 min) by using the sialometry method and the buffer capacity of saliva by determining the pH-value. In the second part of the clinical enquiry, we evaluated bruxism symptoms with respect to generalized tooth attrition, dentine exposure and visible enamel cracks and examined a
potential muscle trismus by measuring the maximal opening of the mouth. The majority of methamphetamine abusers reported a dry mouth (72 %) and jaw clenching (68 %). Almost half of all methamphetamine abusers experienced pain in the temporomandibular joint (47 %). With regard to the clinical findings, methamphetamine abusers showed significantly lower total saliva production (ml/5 min) (p 0.05). The sympathomimetic effects of chronic methamphetamine abuse may lead to dry mouth and extensive bruxism and therefore can increase the risk for caries decay, periodontal lesions and tooth wear. Furthermore, a significant decline of saliva buffer capacity in methamphetamine abusers may trigger the risk for dental erosions. Methamphetamine abusers and practitioners should be aware of these symptoms.

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