P51: Salivary alpha-amylase activity variation along the menstrual cycle

Ana Rita Pereira[1,2], Amaro Frutuoso [2,3]

[1]Centre of Health and Environmental Research (CISA), School of Allied Health Technologies, Polytechnic Institute of Porto, Portugal
[2]Pathology Department of Pedro Hispano Hospital, Local Health Unit of Matosinhos, Portugal
[3]Pathological, Cytological and Thanatological Anatomy Department, School of Allied Health Technologies, Polytechnic Institute of Porto, Portugal

Presenting author: rita_pereira_30@hotmail.com

Introduction: Salivary alpha-amylase, produced by the salivary glands, is the main enzyme present in saliva (Ekström, Khosravani, Castagnola, & Messana, 2012). The salivary glands and salivary alpha-amylase production can be influenced by many factors, including circadian rhythms, sex, age, stress, medication, tobacco and alcohol, as well as menstrual cycle (Alagendran, Archunan, Armando, & Guzman, 2010; Rohleder & Nater, 2009). There are reports of the inefficacy of saliva from menstruated women to digest glycogen in histochemical stains. However papers studying the relationship between salivary alpha-amylase activity and the menstrual cycle do not have consensual results.

Objectives: To evaluate alterations in salivary alpha-amylase activity along the menstrual cycle and according to the type of contraception, as well as determine the influence of these alterations in glycogen digestion.

Materials and Methods: Non-stimulated saliva was collected from 53 participants in the various phases of the menstrual cycle. The activity of salivary alpha-amylase using the method of 2-chloro-4-nitrophenyl- -maltotrioside substrate digestion and total protein was tested using the benzethonium chloride method. Additionally the samples with highest and lowest activity were used in the stain PAS after enzymatic digestion.

Results and Discussion: No differences were found between collection phases in the control as well as in the menstruated women group ($p>0.05$). Type of contraception also did not affect alpha-amylase activity. Despite the difference between activity values, all the samples shown to be effective digesting glycogen. However in some slides it was observed epithelial cells contamination.

Conclusion: Salivary alpha-amilase activity is not influenced by menstrual cycle or by the use of contraceptives. Although discouraged, salivary amilase can be used in histochemical stains for glycogen digestion.

References

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