

PRESENTER (COUNTRY ONLY): Belgium

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TITLE: L-PRF Membranes from Patients on Anticoagulants Differ from Controls

ABSTRACT BODY:

Objectives: As antithrombotics interfere with blood coagulation they may influence the generation and properties of leukocyte- and platelet-rich fibrin (L-PRF) membranes. Therefore, we evaluated L-PRF properties between membranes originating from patients on anticoagulants or antithrombotics and controls.

Methods: We performed tensile tests and cell counts to compare the mechanical properties (elastic or E-modulus, ultimate tensile strength and stretch at rupture) and cellular content (platelets and leukocytes) of L-PRF membranes.

Results: A total of 35 patients donated blood for the tensile test: 13 controls, 12 on anticoagulants, and 10 on antiplatelets. Tensile results (E-moduli data) showed stiffening behavior amongst the three groups. Compared to the control membranes, the anticoagulant membranes were weaker (ultimate tensile strength 0.57 ± 0.24 MPa versus 0.76 ± 0.25 MPa, difference of 0.33 MPa, 95% CI [0.23;0.63], $P=0.03$) and could not be stretched as far (1.8 ± 0.3 versus 2.0 ± 0.3 times their initial length, difference of 0.2, 95% CI [0.05;0.41], $P=0.01$) (Figure 1). The cell counting was performed on the samples of 55 patients: 23 controls, 16 on anticoagulants, and 16 on antiplatelets. The rate of platelets was similar ($\pm 50\%$) in the three groups. The rate of leukocytes was lower in the anticoagulant group compared to the controls ($69 \pm 10\%$ versus $78 \pm 8\%$, difference of 9%, 95% CI [0.3;17.6], $P=0.04$), and mainly driven by a lower rate of lymphocytes (difference of $\pm 12\%$, 95%CI [3.3%; 19.8%], $P=0.04$). There were no differences between the antiplatelet and control groups for the aforementioned variables.

Conclusions: Our results indicate that L-PRF membranes originating from patients on an anticoagulant therapy are weaker, rupture quicker while stretched, and contain a lower rate of leukocytes than L-PRF membranes of patients not taking these drugs. The clinical relevance of these findings should be further investigated.

PRESENTER: Anna Ockerman

PRESENTER (INSTITUTION ONLY): KU Leuven

AUTHORS (FIRST NAME INITIAL, LAST NAME): A. Ockerman¹, A. Hendrickx¹, W. Willekens⁵, H. Fehervary⁵, J. Vastmans⁵, W. Coucke², P. Verhamme³, C. Politis⁶, M. Quirynen⁷, R. Jacobs^{6, 4}

AUTHORS/INSTITUTIONS: A. Ockerman, A. Hendrickx, Oral & Maxillofacial Surgery - Imaging & Pathology, KU Leuven, Leuven, BELGIUM|W. Coucke, Certified Freelance Statistician, Heverlee, BELGIUM|P. Verhamme, Cardiovascular Sciences, University Hospitals Leuven, Leuven, BELGIUM|R. Jacobs, Dental Medicine, Karolinska Institutet, Stockholm, SWEDEN|W. Willekens, H. Fehervary, J. Vastmans, Biomechanics, KU Leuven, Leuven, BELGIUM|C. Politis, R. Jacobs, Oral & Maxillofacial Surgery - Imaging & Pathology, UZ Leuven, Leuven, BELGIUM|M. Quirynen, Oral Health Sciences, KU Leuven, Leuven, BELGIUM|