

16<sup>th</sup> International Conference on

# MODERN DENTAL HEALTH & TREATMENT

September 21-22, 2018 | Philadelphia, USA

## Leukocyte and platelet-rich fibrin in oro-maxillo-facial surgery: Safety, efficacy and clinical protocol recommendations from randomized controlled clinical trials

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**Objectives:** Leukocyte and Platelet-Rich Fibrin (L-PRF) is a 3-D autogenous biomaterial obtained via the simple and rapid centrifugation of whole blood patient samples, in the absence of anti-coagulants, bovine thrombin, additives or any gelifying agents. A relatively new “revolutionary” step in second generation platelet concentrate-based therapeutics, the clinical safety more so, efficacy and effectiveness of L-PRF remains highly-debatable, whether due to preparation protocol variabilities, limited evidence-based scientific and clinical literature and/or inadequate understanding of its bio-components. This critical review provides an update on the application and clinical potential/effectiveness of L-PRF during oral surgery procedures, limited to evidence obtained from human Randomized and Controlled Clinical Trials. Recent functional recommendations on L-PRF preparation protocols are provided to the interested clinician as well as the involved researcher.

**Data:** All available/accessible clinical trials.

**Sources:** PubMed (from Jan 2014 – Feb 2016).

**Study Selection:** Eligibility criteria included: “Human Randomized Controlled Clinical Trials” and “Use of Choukroun’s classic L-PRF preparations only”.

**Conclusions:** Autologous L-PRF is often associated with early bone formation and maturation; accelerated soft-tissue healing; and reduced post-surgical pain, edema and discomfort. Preparation protocols require revision and standardization. Well-designed RCTs (according to the CONSORT statement) are also needed for validation. Furthermore, a better analysis of rheological properties, bio-components and bioactive function of L-PRF preparations would enhance the cogency, comprehension and therapeutic potential of the reported findings or “observations”; a step closer towards a new era of “super” dental bio-materials and -scaffolds.

**Clinical Significance:** L-PRF is a simple, malleable and safe biomaterial suitable for use in oral surgery. An innovative tool in Regenerative Dentistry, L-PRF seems a robust and possibly a cost-effective biomaterial alternate for oro-dental tissue repair and regeneration.

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