

# ONJ UPDATE 2024

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### Abstract Submission FORM

#### Could leukocyte and platelet rich fibrin influence the surgical treatment of medication-related osteonecrosis of the jaws (MRONJ)?

SECTION: Case Series

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#### **Background**

Medication-related osteonecrosis of the jaws (MRONJ) is a drug-related adverse reaction associated with progressive necrosis of maxillary or mandibular bone, which occurs in patients treated with drugs related to increased risk of this disease, not treated with radiation therapy in the head and neck district. Drugs that can cause this condition are antiresorptives, including bisphosphonates, with different risks depending on administration, and antiangiogenics. These drugs are used as first-line in patients with severe osteoporosis or affected with bone metastases; therefore, this condition can affect patients' quality of life, which is often already reduced by their oncological diseases or multiple bone fractures. The treatment of MRONJ is frequently very complex and variable depending on various factors, including the stage of osteonecrosis and the patient's general health condition; surgical therapy plays a key role in cases with weak or no response to non-surgical therapy, but it is for some cases, not therapeutic but palliative for the symptomatology associated with the condition. Among the most recent technical developments in the surgical field, in relation to osteonecrosis, we find the application of blood components not used for transfusion, such as platelet-rich plasma (PRP). These whole blood components have a high number of growth factors that can promote healing of surgical sites by stimulating tissue regeneration. Through the centrifugation of blood, it is possible to obtain membranes rich in platelets and leukocytes (L-PRF) of autologous origin, which can be applied at surgical sites.

#### **Patients and methods**

Ten patients showing exposed bone in addition to current or past intake of osteonecrosis-related drugs were included in this case series. Among the selected patients, with a mean age of 71 years only one patient was male. In all cases included, the stage one pathological condition, did not respond to medical therapy in the presence of reported symptoms, such as painful condition and osteonecrosis affected the mandible in 90% of these cases. All patients underwent surgical debridement, with surgery by primary intention, but in five cases L-PRF membranes was applied surgically. Intraoperatively, a specimen was collected and submitted to histological examination, which confirmed the presence in all treated cases of necrotic bone. Subsequently, the patients were monitored during the wound healing to identify any persistence of the disease. The cases included in the study had no active-stage oncological diseases and were retrospectively selected.

#### **Results**

All cases treated with L-PRF application, accounting for 50%, showed complete healing in the absence of bone exposure in both the short- and long-term evaluation, with one year follow-up. Whereas two of the five cases treated surgically in the absence of L-PRF application showed a suboptimal postoperative course, with persistence of exposed bone one in the maxillary and one in the mandibular site, in the absence of a complete resolution of the pathological aspect.

#### **Conclusions**

In agreement with the most recent literature, L-PRF can be a valuable aid in surgical treatment of osteonecrosis of the jaws, in relation to its properties, for the presence of growth factors able to promote healing and tissue regeneration. Currently, there are few studies in the literature about the use of this procedure in MRONJ surgical treatment; therefore, further studies are needed in order to define a specific protocol and confirm its outcomes.

#### **REFERENCES:**

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- 2) Tenore G, Zimbalatti A, Rocchetti F, Graniero F, Gaglioti D, Mohsen A, Caputo M, Lollobrigida M, Lamazza L, De Biase A, Barbato E, Romeo U. Management of Medication-Related Osteonecrosis of the Jaw (MRONJ) Using Leukocyte- and Platelet-Rich Fibrin (L-PRF) and Photobiomodulation: A Retrospective Study. *J Clin Med*. 2020 Oct 29;9(11):3505.
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