

## **TOOLS OFFERED BY REGENERATIVE MEDICINE FOR THE TREATMENT OF OSTEOARTHRITIS – PLATELET RICH PLASMA (PRP)**

D. Ferrante<sup>1</sup>, A.R. Marraffa<sup>2</sup>, C. De Castris<sup>3</sup>, A. Serio<sup>1</sup>, G. Malagnino<sup>4</sup>, V.G. Colacicco<sup>5</sup>, G. Mingolla<sup>1</sup>

(1) ASL TARANTO, PHARMACY, MARTINA FRANCA, ITALY. (2) ASL TARANTO, ANESTHESIA, MARTINA FRANCA, ITALY. (3) UNIVERSITY OF SIENA, PHARMACY, SIENA, ITALY. (4) ASL TARANTO, HEALTH DIRECTORATE, MARTINA FRANCA, ITALY. (5) ASL TARANTO, GENERAL DIRECTION, TARANTO, ITALY.

### **BACKGROUND AND IMPORTANCE**

Osteoarthritis is the most common form of joint disease that causes pain, functional disability and worsening of the quality of working and social life. The main therapy is analgesic, with the administration of painkillers as needed and with the use of local infiltrations of anesthetic corticosteroids and hyaluronic acid. When ineffective, prosthetic intervention is necessary.

### **AIM AND OBJECTIVES**

A different approach represented by the use of Regenerative Medicine protocols by means of injection of autologous PRP, which initiates a process of tissue self-repair.



### **MATERIAL AND METHODS**

The PRP procedure involves centrifugation of the patient's whole blood with isolation of platelet-rich plasma to be injected in a single solution into the intra-articular cavity followed by a radiofrequency treatment that modulates the environment, making it more receptive to the biological activators present in the PRP. 30 patients were enrolled by referring to the VAS pain scale and the WOMAC scale for joint function, with checks at 1 and 6 months.

### **RESULTS**

Platelet granules rich in growth factors have an antinociceptive effect and induce cell proliferation by modulating the intra-articular environment to promote chondrogenesis, inhibiting the production of inflammatory mediators. This produced a 50% reduction in painkiller administrations in the first month and a 98% reduction at six months. The treatment has replaced ultrasound-guided infiltrations, reducing the use of expensive drugs such as hyaluronic acid. The cost of the KIT dedicated to the PRP procedure is €700/procedure, the DRG associated with the procedure is €2100/service, with a net gain compared to the direct cost of the technology of €1400.

### **CONCLUSION AND RELEVANCE**

The novelty of the procedure in the hospital under study does not allow us to calculate the advantage of the autologous remodulation of the joint microenvironment, in terms of impact on the orthopedic prosthetic intervention. The advantages will be evaluated over time in terms of reduction in direct expenditure for the purchase of drugs, prostheses and indirect expenditure for hospitalizations and risks linked to orthopedic surgical practice. Investing in new technological methods such as PRP preserve technological, financial and social resources.

