Author
Khimion, Ludmila (Kyiv UA) | Prof
Shupyk National Medical Academy of Postgraduate Education - Family Medicine

Title
Effectiveness of the intra-articular injection of platelet autologous plasma in nonsurgical management of post-traumatic osteoarthritis

Coauthors
Burianov O., Havryliuk H.

Summary
Osteoarthritis (OA) is the most common form of arthritis and trauma is one of the major risk factors for OA development in young age. The natural repair potential of cartilage tissue is low, so use of known regenerative stimulus such as platelets derived products can be helpful.

Introduction
To study the efficacy and safety of the platelet autologous plasma (PAP) in the treatment of post-traumatic knee OA.

Methods
The study enrolled 58 patients with diagnosed post-traumatic knee OA(radiological stage I-II,according to Kellgren-Lawrence scale) aged 18-44 years,12-60 months after trauma.Patients with severe comorbidities,systemic disorders,after knee surgery,other joint diseases were excluded.Enrolled patients (31 women(53.4%) & 27 men(46.6%),mean age 36±4.1 years) were divided into 2 groups.Gr.1 included 30 patients who consented to receive standard OA treatment(NSID,physiotherapy,exercises) & intra-articular injections of PAP(3 injections at intervals of 3-5 days)(total plasma volume–12-15 ml/course,average platelet count–(1280-1320±22.1x109);Gr.2 included 28 patients who received only standard OA treatment.Both groups were of comparable age,gender,initial level of pain(VAS score in Gr.1–(55.2±0.8)mm, Gr.2–(54.7±0.9)mm,p>0.05) & WOMAC index(Gr.1–(45.3±1.1),Gr.2–(47.5±1.4),p>0.05).All patients had been examined & evaluated at the first visit and after 1, 6 & 12 months after course of treatment

Results

At 1st month after treatment course patients of both groups demonstrated similar results in pain and function improvement (general WOMAC index in Gr.1 was 2 (accordingly (20.6±1.32) and (22.5±0.96); p>0.05). To the contrary, at the next scheduled evaluations general WOMAC index in Gr. 1 was significantly lower than in Gr. 2 (21.8±0.97) and (38.3±1.31) at 6th month and (19.4±1.05) and (36.7±2.1) at month 12; p<0.05). In general during the study patients in Gr.1 demonstrated better results of treatment than patients in Gr.2, mostly because of pain and stiffness improvement, less frequent OA exacerbations and need in NSAID use. There were no adverse reactions due to PAP use during the study.

Conclusion

Use of PAP in complex treatment of the post-traumatic knee OA demonstrated promising results in young patients and need further investigations.

References

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