

Platelet Rich Plasma in Tennis Elbow

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ABSTRACT

Objective: To study the platelet rich plasma in tennis elbow.

Study Design: Observational study

Place and Duration of Study: This study was conducted at the Idris teaching hospital Sialkot during Jan 2018 to Oct 2020.

Materials and Methods: 100 patients with tennis elbow and who visited our Idris teaching hospital Sialkot with conservative treatment were treated with PRP, and results were evaluated with raised platelet rich plasma. History, examination and X-ray of elbow was taken. Written informed consent was taken before taking History, examination and X-ray of elbow. The permission of Ethical Committee was considered before collecting the data and get publishing in Medical Journal. The data was analyzed for results by SPSS version 20.

Results: The incidence of Tennis elbow was maximum 17(32.69%) at age group 26-36 years and was minimum 3(5.76%) at age group 15-25 years. The incidence of Tennis elbow was 32 (61.53%) in male and 20(38.46%) in case of female. The incidence of Tennis elbow was maximum 26(50%) in middle class and was minimum 5(9.61%) in high gentry. The incidence Tennis elbow was 52(100%) in Platelet plasma rich injection given to patients having pain in elbow joint and was 00(00%) in plantar fasciitis.

Conclusion: In conclusion, local injection of obtained from the same individual Platelet rich plasma resulted to be a hopeful form of treatment for tennis elbow. It is both safe (avoiding surgical complications) and effective in relieving pain and improving function. It is a cost related method for the sick persons. The current available data support that repeated steroid injections are deleterious and may lead to serious consequences, and our study demonstrates a newer, safer, and better alternative for patients. However sustained efficacy of this promising and safer therapeutic option should be further evaluated in long-term follow-up studies that include a larger number of patients.

Key Words: Platelet, Plasma, Tennis Elbow.

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INTRODUCTION

Platelet-rich plasma (PRP) is an autologous mixture of platelets and growth factors produced by centrifugation of whole blood¹. PRP may enhance soft tissue regeneration processes by releasing platelet-derived growth factors, cytokines, and other proteins capable of stimulating and modulating the inflammatory response²⁻⁴. Chen et al. in their in order to determine overall trends showed that Platelet Rich Plasma is a safe and beneficial way of helping tendon and ligament healing¹.

In outside the body study have shown that human tenocyte growth increases when cultured in Platelet Rich Plasma showing that Platelet Rich Plasma start the promoting metabolic activity effect of growth factors increasing tendon matrix regrowth. An increased Transforming growth factor beta concentration has been coincided in many works with the clinical efficacy of Platelet Rich Plasma⁵⁻⁷.

In disparity to the basic science data, the clinical effectiveness of Platelet Rich Plasma has been noted with incompatible result, including several methodical analysis and meta-analyses⁸. Platelet Rich Plasma has been used in many soft tissue pathologies such as pathology of tendon and ligament injuries. However, it remains unclear especially in chronic elbow conditions whether Platelet Rich Plasma should be suggested as a treatment method before doing a surgical treatment^{1,8-10,11}. The aim of this article is to provide a description knowledge review regarding the role of Platelet Rich Plasma in the most common elbow soft tissue pathologies.

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MATERIALS AND METHODS

During Jan 2018 to Oct 2020, 100 patients with tennis elbow and who visited Idris teaching hospital Sialkot with conservative treatment were treated with platelet rich plasma (PRP) and results were evaluated with raised platelet rich plasma. History, examination and X-ray of elbow was taken. Written informed consent was taken before taking History, examination and X-ray of elbow. The permission of Ethical Committee was considered before collecting the data and get publishing in Medical Journal. The data was analyzed for results by SPSS version 20.

RESULTS

The incidence of Tennis elbow was maximum 17(32.69%) at age group 26-36 years and was minimum 3(5.76%) at age group 15-25 years as shown in table no 1.

Table No. 1: Age distribution in Tennis Elbow

Sr #	Age distribution	Patients	%age
1	15-25	3	5.76%
2	26-36	17	32.69%
3	37-47	14	26.92%
4	48-58	13	25%
5	59 on ward	5	9.61%
Total		52	100%

The incidence of Tennis elbow was 32 (61.53%) in male and 20(38.46%) in case of female (table 2).

Table No. 2: Gender distribution in Tennis Elbow

Sr #	Gender distribution	Patients	%age
1	Male	32	61.53%
2	Female	20	38.46%
Total		52	100%

The incidence of Tennis elbow was maximum 26(50%) in middle class and was minimum 5(9.61%) in high gentry as shown in table no 3.

Table No. 3: Socio Economic status distribution in Tennis Elbow

Sr #	Socio Economic status	Patients	%age
1	High gentry	5	9.61%
2	Middle class	26	50%
3	Lower class	21	40.38%
Total		52	100%

The incidence Tennis elbow was 52(100%) in Platelet plasma rich injection given to patients having pain in elbow joint and was 00(00%) in plantar fasciitis as shown in table no 4.

Table No. 4: Platelet rich plasma distribution in Tennis Elbow

Sr #	Platelet rich plasma	Patients	%age
1	Elbow joint	52	100%
2	plantar fasciitis	00	00%
Total		52	100%

DISCUSSION

The present work showed that local injection of Platelet rich plasma is an important form of therapy that provides significant treatment of pain and betterment in function in both tennis elbow and plantar fasciitis. However, it is possibly a method for sick persons than steroid use and surgery. The suggested method of action of autologous Platelet rich plasma is betterment of early neotendon properties and betterment of tissue healing by increasing cellular movement of a motile cell, growth and difference, removing of tissue waste, formation of new blood vessels and laying of non-cellular portion of a tissue.¹²

Relating to tennis elbow, our results are similar to those noted by Mishra and Pavelko^{13,14,15} who showed a significant improvement of symptoms after eight wk in 60% of the sick persons treated with PRP. At the end of 6 month, patients treated with PRP noted 81% improvement in their VAS pain scores ($P=0.0001$). Our results also are in agreement with that observed by Peer booms *et al.*¹⁰ who reported that 24 of the 49 patients (49%) in the corticosteroid group and 37 of the 51 patients (73%) in the PRP group were successful ($P<0.001$).^{16,17,18}

In our study, we observed highly significant differences between VAS and DASH scores before and after injection ($P<0.001$); after 4 to 8 wk after injection, 75% patients had excellent VAS score improvement (>50% reduction) and around 62% had reduction of DASH score (>50%).¹⁹⁻²⁰

In our study, significant results were observed when VAS and FHSQ were compared before and after injection ($P<0.003$); 82% patients had a decrease in VAS score (>50%) and around 60% had improvement in FHSQ score (>50%).

CONCLUSION

In conclusion, local injection of obtained from the same individual Platelet rich plasma resulted to be a hopeful form of treatment for tennis elbow. It is both safe (avoiding surgical complications) and effective in relieving pain and improving function. It is a cost related method for the sick persons. The current available data support that repeated steroid injections are deleterious and may lead to serious consequences, and our study demonstrates a newer, safer, and better alternative for patients. However sustained efficacy of this promising and safer therapeutic option should be further evaluated in long-term follow-up studies that include a larger number of patients.

Author's Contribution:

Concept & Design of Study: Adnan
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Revisiting Critically: Adnan, Waqas Javed
 Final Approval of version: Adnan

Conflict of Interest: The study has no conflict of interest to declare by any author.

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