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The Importance of PRP Therapy in Modern Medicine and the Effectiveness of its Use in Gynecological Practice

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Abstract: PRP therapy is now widely used in modern medicine in the complex treatment of many different diseases. This method is based on the biostimulation properties of a large number of saturated platelet of the autoplasm of the tumor and stimulates the growth factor of the host cells to restorate the damaged tissue. PRP (platelet-rich plasma) therapy is a treatment method that involves reintroducing plasma that has been separated from the patient's blood into the patient's body. The composition of plasma is rich in a large number of thrombocytes and growth factors, and it is now widely used in various medical fields, such as dermatology, traumatology, reproductive medicine, urology, microvinargen, aesthetic medicine and more. According to the results of the scientific review published on the Pubmed website in 2020, the main mechanisms of action of PRP therapy were shown. According to him, plasma contains 5-6 times more platelets than blood, and platelets have the ability to produce growth factor, which is important in tissue regeneration. Because platelets contain a high concentration of growth factor, they have anti-inflammatory, immunomodulatory and regenerative effects and futher shorten the rehabilitation period (Peter Events, Kentaro Onishi and other authors, 2020).

Keywords: PRP therapy, autoplasm, thrombocytes, biostimulation, regeneration, rehabilitation.

Introduction

Initially, the PRP therapy method proved its effectiveness in maxillofacial surgery, orthopedics, and ophthalmology as a complex treatment method that stimulates tissue self-healing. Later, the method of treatment with blood plasma began to be actively used in cosmetology as an injection for rejuvenating and improving the quality of facial skin. For the first time in the practice of gynecology, blood plasma treatment was proposed to stimulate the growth of the thinned endometrium, and since the results obtained from the treatment have high indicators, it was widely used in this field. Since then, plasma treatment has become more widespread and has proven to be more than 80% effective in treating gynecological diseases.

Methods

Clinical significance of PRP therapy

Plasma is a liquid fraction of blood, which contains a large amount of platelets, proteins, glucose, lipids, enzymes, minerals and other biologically active substances. Platelets, which are the main element of plasma, produce a growth factor on their own, which stimulates cell regeneration, division, and intercellular metabolism. Local increase in growth factor concentration has the

following characteristics: liquidation of inflammatory foci; tissue renewal; improvement of local blood circulation; increase of local immunity. The fact that PRP therapy provides a large amount of growth factors and various proteins capable of stimulating the recovery process is the main reason for its use in widespread clinical practice. In various tissues, including the musculoskeletal system, the recovery process takes a long time due to the limited blood supply and the slowing down of cell turnover. The use of PRP accelerates neurovascularization and therefore increases the flow of blood and nutrients necessary for cell regeneration in damaged tissues. Also, increasing blood supply, PRP stimulates the demand, proliferation and specialization of cells involved in the regeneration process. As the main component of PRP therapy, platelets contain more than 1,100 different proteins, resulting in the formation of more than 1,500 protein-based bioactive factors that increase the effectiveness of PRP. These factors include immune system compounds, growth factors, enzymes and their inhibitors, and other factors that may be involved in tissue repair and wound healing. Another important feature of PRP therapy is that it is autoplasm taken from the patient's own blood. Therefore, the use of autoplasmic PRP excludes any life-threatening factors related to the risk of cross-contamination, disease transmission or immune reactions. The important aspect of this treatment method compared to other standard treatment methods is that PRP therapy uses human autoplasm (blood serum taken from a person's own body), so it is absolutely harmless, painless, inexpensive, and does not cause any allergies. Generally, PRP is defined as an autologous concentration of human platelets that is 3-5 times higher than the physiological concentration of platelets in whole blood. In a healthy person, the number of normal platelets is from 150,000 to 350,000 μ/l. These are small, discoid cells without a nucleus and therefore cannot reproduce. They are formed from megakaryocytes in the bone marrow and have a lifespan of about 7 to 10 days. Platelets are usually associated with their main functions in hemostasis and coagulation, i.e. after a bleeding injury, platelets are activated and begin to release granules filled with growth factors, which reduce the level of inflammation and promote the healing process. Due to a wide range of growth factors, PRP stimulates collagen formation, accelerates tissue regeneration, stimulates blood vessel and endothelial growth, provides hemostasis, reduces pain, and is anti-inflammatory. has an effect, reduces the risk of infectious complications and prevents complications after the disease. These effects are based on a synergistic interaction with local cells, which determines the specific reactions of proliferation, cell migration and extracellular matrix synthesis.

Results and Discussions

The plasma treatment method is widely used in modern gynecology practice as a highly effective method for eliminating a large number of diseases that occur in women. As an example, in cases of thinning of the uterine endometrium (less than 7 mm in size), in order to prepare women for pregnancy, the plasma treatment method helps to quickly restore the endometrial layer and increase its regenerative properties. In addition, the use of PRP-therapy for the purpose of rehabilitation for the short-term restoration of damaged walls of the vagina and uterus after many surgical operations performed on the vagina and uterus (posterior and anterior vaginal colporrhaphy, perineolevatoroplasty, cystectomy, etc.) is now widely used launched. The application of plasma treatment in gynecology practice in order to eliminate chronic inflammatory diseases of female genital organs (endometritis, salpingitis, adnexitis, cervicitis), vaginal dryness, itching and various discomforts, as well as to restore normal microflora. It is widely contributing to the introduction of. The important aspect of this treatment method compared to other standard treatment methods is that PRP therapy uses human autoplasm (blood serum taken from a person's own body), so it is completely harmless, painless, inexpensive, and does not cause any allergies.

Indications for PRP-therapy in gynecological practice

Chronic inflammatory diseases of the pelvic organs; synechiae (adhesions) in pelvic organs; cervical erosion; kraurosis of the vulva; leukoplakia; dystrophy of small pelvic organs; in the

treatment of scars; in atony of pelvic floor muscles; in the treatment of dryness of the mucous membrane of the genitals.

In turn, the use of plasma therapy in gynecology practice requires certain conditions, that is, in order to achieve high efficiency, medical specialists are required to conduct this course of treatment several times.

Conclusions

PRP therapy is not recommended in the following cases: in the acute phase of infectious and inflammatory diseases; autoimmune diseases; immune deficiency syndrome; oncological diseases.

In conclusion, it can be said that PRP-therapy has a highly effective practical value in gynecological practice today, and it helps to improve women's reproductive health and quality of life.

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