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Extraction of blood mesenchymal stem cells with the low speed centrifugation concept: Applications in regenerative medicine

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Regenerative therapy with stem cells has gained tremendous momentum over the past decade as a modality geared towards markedly improving wound healing of various tissues by utilizing undifferentiated autologous host cells. While stem cells may be isolated from various locations in the human body, more recently it has been shown that low levels of mesenchymal stem cells also exist circulating within peripheral blood. Platelet Rich Fibrin (PRF) is a regenerative modality that utilizes peripheral blood and centrifugation protocols without the use of anti-coagulants to create a three-dimensional tissue engineering scaffold containing both growth factors and autologous cells. Very recently, it has been shown that modifications to centrifugation speed and time following recently developed concepts (the low-speed centrifugation concept or LSCC) resulted in a marked increase in host cells and growth factors. Within these scaffold constructs, mesenchymal stem cells were also found following collection with this relatively painless and low-cost modality. The objective of the present talk will be to present recent modifications to centrifugation speed and time to optimize stem cell quantities within PRF. Thereafter, the biological data supporting their numbers, as well as their potential for clinical applications will be presented with data coming from many fields of medicine including for the regeneration of osteoarthritic knees, dental regenerative medicine, orthopedic grafting and for facial esthetics.

Biography

Joseph Choukroun completed MD from University of Montpellier, France 1979 and is a Specialist in General Surgery, Anesthesiology from the same university. He is also a Specialist in Pain Management from University of Strasbourg, France. He is the Owner of Private Pain Clinic, Nice France. He is the President of SYFAC, international symposium on growth factors. He is the Inventor of the PRF techniques: L-PRF, A-PRF and i-PRF. He is a Researcher working in Form Lab at University of Frankfurt. He is the author of several scientific publications and is recognized as an International Speaker.

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