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## Faster engraftment dependent to better mobilization

**Mehrdad Payandeh**
Kermanshah University School of Medicine, Iran

Although the process of HSPC mobilization has been used to benefit patients for close to 30 years, the mechanisms governing HSPC mobilization remain incompletely understood. This gap in knowledge has hampered the development of safer and more effective agents to mobilize HSPCs clinically in several key regulators of mobilization, most prominently the CXCL12/CXCR4 axis. [FDA] approval in 2008 of the CXCR4 antagonist plerixafor for the mobilization of CD34+ cells in patients with non-Hodgkin lymphoma and multiple myeloma (MM) prior to autologous HSPC transplantation. From the perspective of a clinician caring for patients undergoing autologous or allogeneic HSPC transplantation, one could argue that we already possess adequate means to procure HSPCs, either through simple bone marrow harvesting procedures or through stem cell mobilization techniques developed and used successfully over the past 30 years. Perhaps the agents we currently have at our disposal are good enough. But 10% to 15% of patients with lymphoma and MM do not mobilize HSPCs adequately and these patients need better mobilizing strategies. In this study, we described details of more than 30 patient with different disorders consist of NHL, MM, AML, ALL and HL transplant in the KUMS bone marrow transplantation center (west or Iran) during 2014-2016. Engraftment was done in equal or less than 10 days in these patients. Specific mobilization is important factor for fast engraftment in patients. Additionally, there are a number of important emerging clinical indications for HSPC mobilization where safer, more effective and more rapid means to procure HSPCs would be highly desirable. The most common method used to procure HSPCs from peripheral blood of patients: cyclophosphamide followed by G-CSF. Although certainly clinically relevant, it would be of interest to determine whether there are differences in HSPC phospho-proteomic profile following other stimuli including agents blocking the CXCR4/CXCL12 interaction or antagonists of VLA-4/VCAM1, among other agents, particularly because some data suggest that although HSPC mobilization may be the final common end point, mobilization methods may differ substantially in the manner in which they affect the bone marrow microenvironment. The importance of this article lies not only in the unleashing of another pathway regulating HSPC mobilization. Hopefully, just the beginning of the search for novel targets will improve the lives of our patients.

mehrnoush.aeinfar@gmail.com

## Amniotic fluid: A new approach to biologics and regenerative treatments

**Michael P Zahalsky**
Author Affiliation

Regenerative medicine has often been associated with the process of replacing or reproducing tissues, human cells or organs back to their origin function. Recently, these treatments have involved the use of stem cell technology to treat and manage chronic diseases such as diabetes, heart failure and degenerative nerve, bone and joint conditions. Amniotic fluid is particularly appealing because it contains various proteins, cytokines and a multitude of growth factors that are believed to facilitate angiogenesis while simultaneously preventing inflammation and swelling. ProFlo is amniotic fluid that is minimally manipulated from an FDA cleared tissue bank. We believe that since it is from the genitourinary system, it can be used for homologous use on the genitourinary system. Patients diagnosed with Erectile Dysfunction were injected with ProFlo amniotic fluid and their responses were evaluated using a Penile Doppler to measure pre and post peak systolic velocities. The International Index of Erectile Function Questionnaire (IIEF-5) was also used to evaluate any changes in erectile function. Overall, results were very encouraging and we observed statistically significant changes in PSV values and IIEF responses. Several patients were satisfied with their treatments, reporting an improvement of erections with minimal to no discomfort. Based on our preliminary findings, ProFlo appears to be a possible alternative for men with erectile dysfunction. The use of amniotic fluid to treat erectile dysfunction is still being evaluated, preliminary results are encouraging but more research needs to be conducted to evaluate its effectiveness and overall safety.

kelly@urostembiologics.com