Menstruation proves more than a curse

November 15 2007

The cells which thicken the womb wall during a woman's menstrual cycle contain a newly discovered type of stem cell, and could be used in the treatment of damaged and/or old tissue, according to research published today in the online open access publication, *Journal of Translational Medicine*.

Dr Xiaolong Meng of the Bio-Communications Research Institute in Wichita, Kansas, led the research team consisting of scientists from the University of Alberta, University of Western Ontario and Medistem Laboratories (mdsm.ob). The team identified a new type of stem cell that can be reproducibly isolated from menstrual blood collected from healthy female subjects.

"We have many problems with our current methods of stem cell therapy, like those taken from bone marrow," commented Dr Meng, "They may be rejected by the recipient and/or have limited potential to generate new tissue. Now we've found a possible new way to overcome these difficulties by using cells from menstrual blood."

The growth of new blood vessels from pre-existing blood vessels is an essential part of the uterine or womb phase of the menstrual cycle. Cells collected from the menstrual blood of women include types which can be cultured in the laboratory, which replicate almost 70 times in a very rapid time span. This replication rate is far faster than cells which are currently used, taken from umbilical cord blood and bone marrow. The cells are so unique in their ability to develop into at least 9 different cells including heart, liver and lung, that researchers called the cells

Endometrial Regenerative Cells (ERC). Not only do ERC replicate at a phenomenal rate of almost every 20 hours, but they produce unique growth factors at a rate of almost 100,000 greater than cells from umbilical cord blood.

A mere 5ml of menstrual blood collected from a healthy woman provided enough cells which after two weeks of culture provided beating heart cells. The results of this breakthrough research indicate that these cells could be cultured at a large scale, thereby providing an alternative to the current methods of using bone marrow and umbilical cord blood, which itself poses threats of rejection.

Source: BioMed Central