Stem Cells, I Presume?

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This issue of TRANSFUSION MEDICINE AND HEMOTHERAPY is focused on cellular therapies involving stem cells. The topics vary from identity of primary cells and cell lines to the current status of the use of cord blood in Germany.

Dittmar et al. [1] address the identity crisis currently becoming visible with the use of available cell lines: 20–30% of the cell lines in use are not the cell lines we think they are. This hypothesis is recently being supported by a paper of Boonstra et al. [2] and commented on in an editorial by Shoemaker [3]. The authors found that 3 (SEG-1, BIC-1 and SK-GT-5) of the 13 most widely researched esophageal cancer cell lines are contaminated with other malignancies, such as lung and bowel tumor cells, or are misidentified. Even more frightening is the fact that once a cell line is unmasked, still numerous publications are accepted in which these cell lines are used (W. Dirks, personal communication). Several publishers have started to take action in the way that in papers where cell lines are used a verification of the authenticity of the cell line has to be presented before publication. Dittmar et al. [1] introduce us to the state of the art technologies in this area which will be important not only for cell lines but also for the quality control of primary cells after cultivation and manipulation.

Lindner et al. [4] turn our attention to a different 'stem' cell: the mesenchymal stem cell. In their view the definition of mesenchymal stem or stromal cells has some flaws which

makes it difficult to compare publications from different sources. They propose a set of criteria for a better definition of mesenchymal stem cells which will certainly be helpful in analyzing this novel cell source.

Freimark et al. [5] presented a review on techniques for the encapsulation of stem cells. Focusing on hematopoietic and mesenchymal stem cells, the prospects and procedures of encapsulating single cells are discussed, and an outlook on their potential clinical use is given.

Schäfer [6] draws our attention from the cultivation of stem cells toward a potential diagnostic use of stem cells. In his overview recently developed labeling and imaging techniques of cells are presented. However, there are still a number of difficulties to overcome before these techniques are available in routine clinical use.

Although one gets the impression that the clinical use of cord blood is going like a wild fire all over the world, culminating in double cord transplantations, in Germany, the clinical use is at present only a smouldering fire. Lauber et al. [7] of the Mannheim Cord Blood Bank informs us about the current status of cord blood transplantation and the exiting new developments in this field which will certainly turn up the heat also in Germany.

All together this issue of TRANSFUSION MEDICINE AND HEMOTHERAPY contains a nice bouquet of stem cell informations, I presume.

References

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