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An update on methods for cryopreservation and thawing of hemopoietic stem cells

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This presentation will focus on critical issues related to stem cells cryopreservation procedures of minimally manipulated products containing allogeneic or autologous hematopoietic progenitor cells (HPC). The issues include: Regulations and standards, process design, process validation and qualification, volume reduction, cell concentration, cryoprotectants and cryopreservation, storage, warming events, quarantine, cross contamination during storage and thawing. New approaches of processing are developed such as automatic devices for volume reduction and high cell concentration in the frozen product. DMSO at 10% final concentration is still the most used cryoprotectant for HPC cryopreservation. Although controlled rate freezing is the recommended method for HPC cryopreservation, alternative methods may be used. Last generation vapor storage vessels ensure temperature stability better than older tanks. Moreover, advantages and disadvantages of thawing procedures carried out at the patient's bedside or in the laboratory will be discussed.

Biography

Lucilla Lecchi has completed her Degree in Biological Sciences at the University of Milano, Italy. She is the Processing Facility Director of the Milano Cord Blood Bank and responsible of the laboratory for cryopreservation of HPC-A/HPC-M at Centro Trasfusionale Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy. She has published more than 59 papers in reputed journals.

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