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Overview of Twenty Years of Radiation and Tissue Banking Activity in Argentina

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Radiation sterilization of human tissues in Argentina was a consequence of health care products sterilization by gamma radiation. Radiation technology was implemented in 1970 when the first multipurpose gamma facility was built at the Ezeiza Atomic Centre of CNEA.

Organ and tissue transplantation is a well established effective therapy that saves lives and significantly improves the quality of life. Ionizing radiation is used for sterilization in order to provide clinically safe tissue for therapeutic purposes of implantation in every patient in need. Argentina radiation and tissue banking activity started in 1993 with the establishment of two tissue banks using radiation under the IAEA program of technical cooperation, a skin bank and a bone one. Additionally to this start, other tissue banks have adopted tissue sterilization by irradiation. The compatible tissues sterilized with this methodology are mainly skin (frozen, glycerolized), bone (lyophilized, frozen), and amniotic membrane (glycerolized, frozen, dehydrated). The donation and transplant of human organ, tissue and cells is regulated and coordinated by the National Institute Unique Central Coordinator of Ablation and Implant (INCUCAI). In regards to radiation and nuclear safety, physical protection and nuclear non-proliferation issues are regulated and controlled by the Nuclear Regulatory Authority (ARN). Eight tissue banks use gamma radiation for sterilization of human tissues (6 musculoskeletal, 1 skin and 1 amniotic membrane).

Argentina has participated actively in several IAEA projects regarding radiation and tissue banking program, and it has been selected by the IAEA to host the Regional Training Centre for the Latin American region. The following activities were implemented: regional training courses in Buenos Aires, face to face (five) and virtual (four) modalities; collaboration on several materials related to tissue banking and radiation sterilization of tissue allograft, codes of practice for radiation sterilization of human tissues and recommendations for the operation of tissue banks.

Country or International Organization

Argentina

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