

REGENERATIVE MEDICINE FOR PREMATURE OVARIAN FAILURE

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Abstract Body

Premature Ovarian Failure (POF) is estimated to occur in about 1% of the population with ethnic variations. It differs from the women having age related menopause in many ways. Firstly, they suffer from concurrent conditions depicting the early loss of ovarian function. Secondly, there is a possibility of their ovarian function recovery. Finally, they have faced many years of life without endogenous estrogen exposure. Ovarian hormone production and folliculogenesis can be restored by proper hormone treatment and intraovarian injection of mesenchymal stem cell. Stem cells have the capacity to divide (self-replicate) and differentiate into multiple cell types.

Rich source of mesenchymal stem cells is the bone marrow. For this treatment bone marrow is extracted and the mesenchymal stem cells are separated through Sepax machine (Sepax 2 S-100, *Biosafe*). The Sepax 2 S-100 is a mobile, closed capability system that efficiently processes umbilical cord blood, bone marrow, peripheral blood or other blood derivatives, as permitted by applicable regulatory requirements. The fundamental scientific technology relies on a separation chamber that provides both separation through rotation of the syringe chamber (centrifugation) and component transfer through displacement of the syringe piston. An optical sensor measures the light absorbency of the separated components and manages the flow direction of each of them in the correct output container.

All the parameters mentioned in ICMR for undertaking stem cell therapy have been taken care. This paper discusses two cases of pre-mature ovarian failure having positive results through regenerative medicine. This study contributes in increasing the pile of evidence for POF treatment through Stem Cell Therapy.