

FROM TISSUE ENGINEERING TO REGENERATIVE MEDICINE

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Cell therapy approaches, i.e. transplantation of “ex vivo” expanded autologous stem/progenitor cells, alone or associated to carrier biomaterials can be life/organ saving and allow treatments of very critical patients. However, due to difficult logistics, regulatory issues requiring the adoption of highly sophisticated cell culture facilities, and the high cost of the procedures, these approaches cannot be applied for largely diffuse, difficult to heal tissue deficits such as chronic skin ulcers or osteoarthritis.

To enable a large number of patients to benefit from a Regenerative Medicine approach, new strategies and new products should be considered. The use of media conditioned by progenitor / stem cells or of extracellular vesicles and exosomes released by the same cells is being presently investigated. Alternatively, the treatment of the tissue deficits with platelet derived components has been proposed.