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Protective effect of T cell depletion anticipating mesenchymal stem cell transplantation in acute kidney injury mice model

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In the last decade much effort has been introduced into treating toxic acute kidney injury with novel mesenchymal stem cell (MSC) approaches. Inflammation is known to play a crucial role in cisplatin induced acute kidney injury, were the inflammatory pathways were shown to be predominantly driven by T lymphocytes. However, most preclinical studies of stem cell xenotransplantation are performed on severe complex immunodeficiency animals lacking innate and adaptive immunity responses, therfore markedly altering the real inflammatory state of the diseased and influencing natural course of illness. MSC were shown to have a great therapeutic potential in many disorders, where, it is not known whether those are equally effective in immunocompetent and immunocompromised microenvironment. Antithymocyte immunoglobulin is a polyclonal antibody preparation with multiple effects on immune system with preferential influence on peripheral T cell depletion. This drug enables dose dependant immunosupression, therefore allowing verification of the hypothesis that therapeutic functions and immunoregulatory properties of MSC are largerly affected by immunologic microenvironment and contribute to regeneration of kidney injury predominantly, when introduced in the non-inflammatory niche.

Biography

Željka Večerić-Haler works as a Medical Doctor, specialist of Nephrology at Nephrology department, University Medical Centre, Ljubljana. As a Nephrologist, she is faced with numerous challenges from the field of Nephrology on daily basis and is specially oriented in the fields of kidney transplantation, regenerative medicine and substitutive therapies of acute and end stage kidney failure. She has completed her PhD from University of Ljubljana Faculty of Medicine in 2016 and her thesis is revealing impact of immunological environment on the behavior and functions of transplanted stem cells. Her interests of research involve studies on stem cell transplantation for regeneration of kidney injury and immune tolerance in kidney transplantation.

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