

THE ROLE OF ADIPOSE DERIVED MESENCHYMAL STEM CELLS AS A TREATMENT IN AUTOIMMUNE DISEASE

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Autoimmune diseases (ADs) are the third most common disease in United States affecting 5 to 8% of population. The major treatment of ADs is immunosuppressive drugs, but these are not effective and associated with substantial toxicities. Adipose tissue is one of the most potent and concentrated source of mesenchymal stem cells (MSCs) as an anti-inflammatory and tissue protecting agent which is promote healing and minimal invasive. In this study conducted in 20 patients with autoimmune diseases in various age between 22 to 70 years old. Patients treated with autologous adipose-derived MSCs transplantation through catheterization. The laboratory analysis result of patients before and after MSCs application in 6 months were measured, include hemoglobin (Hb), white blood cell (WBC), erythrocyte sedimentation rate (ESR), protein and blood levels in urine, high sensitivity c-reactive protein (hsCRP), C3 and C4 complement, anti-nuclear antibodies (ANA) and anti-double stranded DNA (anti-dsDNA). MSCs can improve the performance of hemoglobin as shown in Hb which statistically significant increased ($p=0.002$). MSCs can reduce the inflammatory as shown in the number of leukocytes ($p=0.015$) and ESR ($p=0.031$) which statistically significant decreased. MSCs can repair the renal function as shown in no presences of protein and blood in patient's urine. MSCs are also able to augment the immune response as shown in hsCRP which statistically significant decreased ($p<0.001$), while C3 and C4 complements statistically significant increased ($p<0.001$). ANA and anti-dsDNA showed a negative result which means MSCs therapy may give a good response to heal the ADs.

BIOGRAPHY

Purwati has done specialization in 2008 from Airlangga University and has taken doctoral program in Airlangga University 2010-2012. She is interested in stem cell field from 2008, and she is the Secretary of Stem Cell Laboratory of Airlangga University and Secretary of Surabaya Regenerative Medicine Centre. She became Chairman of Stem Cell Research and Development Centre Airlangga University, Surabaya, Indonesia. She has almost 60 publications in journals, papers and seminar.

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