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UMBILICAL CORD-DERIVED MESENCHYMAL STEM CELL INFUSION IMPROVES LIVER FUNCTION IN LIVER CIRRHOSIS AND IS ASSOCIATED WITH VIRAL LOAD REDUCTION

SP Chin¹, ZVS Cheng², KY Then³, SK Cheong⁴

¹Beverly Wilshire Medical Centre, Malaysia, ²Cytopeutics, Malaysia, ³Cryocord, Malaysia, ⁴Tunku Abdul Rahman University, Malaysia.

Background: Mesenchymal stromal cells (MSC) may attenuate inflammation and T-cell mediated injury. MSC has also been proven to differentiate into functioning hepatocytes. These properties may be useful for the palliative treatment of patients with end-stage liver failure and cirrhosis.

Methods: Five consecutive patients (4 men; mean age 59 years) with the condition were recruited from a medical clinic. Two patients presented with decompensated liver encephalopathy. The aetiologies were viral hepatitis (n=3), alcohol-induced (n=1), and autoimmune/idiopathic (n=1). Liver cirrhosis was confirmed by abdominal ultrasound. Three patients had portal hypertension with splenomegaly. All received umbilical cord-derived mesenchymal stem cells (MSC) via intravenous infusion. Blood samples were taken at baseline, 6 weeks and 3 months after cell treatment and sent for haematology, liver function test and prothrombin time.

Results: All patients tolerated the procedure well. There was generally improvement in all blood parameters at 6 weeks, sustained at 3 months. Specifically two patients with anaemia and thrombocytopenia, presumably due to splenomegaly, demonstrated significant improvement. Hepatitis viral load by PCR also improved significantly in two out of three patients.

Conclusion: MSC infusion improves liver function tests in patients with hepatitis and may potentially play a role in management of end-stage liver failure and cirrhosis. The association between MSC infusion and viral load reduction warrants further investigation.