

## Balance perturbation system to improve balance compensatory responses during walking in old persons

**Gehan I Salem**

King Khalid University Hospital, Saudi Arabia

Systemic sclerosis is a clinically heterogeneous, systemic disorder which affects the connective tissue of the skin, internal organs, and the walls of blood vessels. It is characterized by alterations of the microvasculature, disturbances of the immune system and by massive deposition of collagen and other matrix substances in the connective tissue.

This study was done to evaluate the frequency of liver disease in patients with scleroderma and, secondarily, to study the frequency of infection of hepatitis B and C virus in these patients and determine frequency of serum autoantibodies in this disease. We studied patients with scleroderma, localized or systemic, in the outpatient clinic of rheumatology and dermatology departments, at King Khalid University Hospital. As for a comparison, healthy persons coming to the clinic with the same mean age were considered as control group.

Forty patients with the diagnosis of scleroderma included in this work, 35% had elevated gamma-glutamyl-transferase (GGT), 30% had elevated alkaline phosphatase (AP) and in 17.5%, the alanineamino-transferase (ALT) was above the reference values. The ALT had changed to be more in scleroderma patients than in controls. Twenty percent (20%) of the patients tested positive for anti-smooth muscle antibodies (anti-SMA) and only one patient had anti-mitochondrial antibodies (AMA). There was no statistical difference between the two groups regarding antibody testing. Anti-HCV antibodies were observed in one patient, and HBsAg was detected in another scleroderma patient. There was no patient with clinically significant hepatic disease.

In this study, although changes in liver enzymes in patients with scleroderma were not uncommon, there was no scleroderma patient with clinical manifestations of liver disease.

[gehan\\_us@yahoo.com](mailto:gehan_us@yahoo.com)