The effects of Garcinia kola and curcumin on the dorsal root ganglion of the diabetic rat after peripheral nerve transection injury

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Abstract

Objective

To test the protective effects of *Garcinia kola* and curcumin on the ganglion tissues of diabetic rats following the use of autologous vein graft in peripheral nerve transection injury.

Methods

The sciatic nerve on the right side was transected, and anastomosis was performed between the proximal and distal ends using an autologous vein graft. Curcumin and *Garcinia kola* seed extract were administered daily by oral gavage. The ganglion tissues were harvested after a 90-day waiting period. Sensory neurons in the dorsal root ganglion at the L4 and L5 levels were used for stereological evaluations. Mean sensory neuron numbers were analyzed using a stereological technique. The size of the light and dark neurons was also estimated and ultrastructural and immunohistochemical evaluations were performed.

Results

A statistically significant difference in sensory neuron numbers was observed between the groups with and without *Garcinia kola* and curcumin applications. The immunohistochemical results showed that the s-100 protein is expressed selectively between cell types.

Conclusion

The results of this study show that curcumin and *Garicinia kola* prevented sensory neuron loss in diabetic rats following transection injury to the sciatic nerve.