PROTEIN KINASE C: AFTER THE COMBINATION OF METFORMIN AND HYPERBARIC OXYGEN THERAPY IN TYPE 2 DIABETES PATIENTS

Abstrak:

Metformin improves not only insulin sensitivity but also vascular endothelial functions and reduces cardiovascular events in patients with type 2 diabetes. Hyperbaric oxygen therapy (HBO therapy), 2.4 ATA reduces directly blood glucose by using glucose to produce energy (ATP), has effect on vasodilatation by stimulating Nitric Oxid Synthase (NOS) and presumably improves Insulin sensitivity via AMPK activation. Therefore, HBO is considered as an adjuvant treatment in type 2 DM beside Metformin. Protein kinase plays a role in translocation of GLUT4 vesicles to cell surface. In this study, we investigated the role of Protein Kinase C in insulin-induced GLUT4 in improving glucose blood reduction. The aim of this study was to find a new management in metformin therapy optimisation in patients with type 2 diabetes, especially in reducing blood glucose, and improving PKC's concentration. It is believed that the progresivity of diabetes depends on PKC appearance and activity and the improvement of insulin sensitivity effects on GLUT4. This was a pre and post experimental clinical study without control. Ten male correspondents were chosed randomly. Blood glucose and PKC concentrations were used as the parameters, examined before, during and after combined treatment of Metformin and HBO therapy were given. Glucose blood reduced significantly after the therapy. PKC's titer had no significant change before and after treatment. Conclusion: Metformin and OHB therapy reduce blood glucose but not significantly increase PKC's concentration. The specific ways of Metformin and OHB therapy's effect should be explored more. The clinical implications of these combination therapies remain to be determined.

Keyword:

Metformin, OHB therapy, PKC, glucose blood

Daftar Pustaka:

Bailey C Treating insulin resistance: future prospects Diab Vasc Dis Res 2007 -
Dipiro JT., Talbert RL., Yee GC., Matzke GR, Wells BG., Posey LM. Pharmacotherapy : A Pathophysiologic Approach 7th Ed Mc. Graw Hill Companies, Inc. 2009 NY
Goodman & Gilman A The Pharmacological Basis of Therapeutics, 11th ed The Mc Graw-Hill Companies, Inc. 2006 NY