

5th International Conference and Exhibition on

Pharmacology and Ethnopharmacology

March 23-25, 2017 Orlando, USA

Polyherbal therapy reversed testicular damage in diabetic rats

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The study was carried out to investigate the testicular protective properties of single and combined extracts of *Moringa oleifera* (MO), *Gongronema Latifolium* (GL), *Ocimum Gratissimum* (OG) and *Vernonia Amygdalina* (VA) in Streptozotocin (STZ) induced diabetic albino Wistar rats. The study design involved 65 rats weighing 120 to 180 g which were divided into 13 groups of 5 rats each. Groups 1 and 2 representing normal and diabetic control (NC and DC) which received 0.5 ml of dimethylsulphoxide (DMSO). Group 3 received 5 IU/kg body weight insulin intraperitoneally and group 4 received 5 mg/kg body weight glibenclamide (GB) orally; groups 5, 6, 7 and 8 received 500 mg/kg body weight of VA, MO, GL and OG respectively. Group 9 received 250 mg/kg body weight of each extract of MO and VA. Group 10 received 250 mg/kg body weight of each extract of MO and GL. Group 11 received 250 mg/kg body weight of each extract of MO and OG. Group 12 received 166.6 mg/kg body weight of each extract of VA, GL and OG. Group 13 received 250 mg/kg body weight of each extract of MO, VA, GL and OG. After 28 days of treatment, the animals were anaesthetized and sacrificed to obtain blood by cardiac puncture. Serum was collected and assayed for testosterone (T), estradiol (E2), follicle stimulating hormone (FSH) and luteinizing hormone (LH). The testes were also collected and photomicrograph taken. The results showed high levels of all parameters in the NC except for E2. The levels were reversed in DC. INS and GB caused a non-significant reversal of results when compared with DC. Other treatment groups showed significant reversal ($P < 0.05$) of the parameters which was better than the response from INS and GB and compared well with the normal control. Photomicrograph showed significant destruction of the testicular architecture in DC. The effects of treatment on diabetic rat testes showed improvements. The improvement was not significant in INS, GB and OG groups, but significant in VA, MO/VA, MO/GL and the three extract groups. The results thus, show that VA and the combined plant extracts produced synergy which could be exploited in reversing diabetes induced testicular damage.

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