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Cardiovascular effect of *Nigella sativa* L. aqueous extract in normal rats

Mohamed Eddouks[1], Hebi M[1], Zeggwagh N-A[1], Benaji B[3] and **Michel J B[2]**
[1]Moulay Ismail University, Morocco
[2]U698 INSERM, France
[3]Faculty of Sciences Ain Chock, Casablanca

The present wok aims to evaluate the cardiovascular effect of *Nigella sativa* L. aqueous extract (NSAE) in normal rats. The *in vivo* experiment showed that the intravenous injection of NSAE at the doses of 50, 100 and 200 mg/kg of body weight produced a dose dependent reduction in the mean arterial blood pressure (MABP) ($p<0.001$) accompanied by a significant fall in heart rate ($p<0.01$). In the *in vitro* experiment, NSAE was tested at the doses of 10, 20 and 30 mg/ml. Addition of NSAE to the plateau contraction induced by Norepinephrine (NE) produced a dose dependent reduction in the arterial tone ($p<0.01$). Furthermore, incubation of NSAE during 30 min caused a right shift of the contraction response curve of aortic ring to NE with a reduction of the maximal contraction response ($p<0.01$). Endothelium destruction significantly reduced the vasorelaxant effect of NSAE at a dose of 30 mg/ml ($p<0.01$). Furthermore, Nitric oxide synthase inhibitor: N^{ω}-Nitro-L-Argenine Methyl (L-NAME) produced a significant reduction ($p<0.01$) of the *in vitro* vasorelaxant effect of NSAE at a dose of 30 mg/ml. We conclude that NSAE possess a rapid and dose dependent *in vivo* hypotensive effect in normal rats which may be probably due to the inhibition of parasympathetic tone. In isolated aortic ring, NSAE possess a potent inhibitor of contractile response to NE which may be probably due to an increase in the endothelial nitric oxide synthesis.

mohamed.eddouks@laposte.net

Capparis spinosa L. fruits aqueous extract improves insulin resistance in streptozotocin-induced diabetic mice

Eddouks M[1], Lemhadri A[1], Hebi M[1] and **Burcelin R[2]**
[1]Moulay Ismail University, Morocco
[2]Rangueil Hospital, France

Background: Majority of diabetic patients make recourse to medicinal plants/herbal-based remedies as alternative therapies to diabetes mellitus. *Capparis spinosa* L. (CS) is a medicinal plant used in the traditional medicinal for the treatment of diabetes mellitus, however, the mechanism of action involved in this pharmacological property of this plant remains undetermined.

Objective: This study was undertaken in order to evaluate the effect of aqueous CS extract on insulin resistance in diabetic mice.

Materials & Methods: Both single and repeated oral administrations of aqueous CS extract were performed multi-low dose streptozotocin-induced (MLDS) diabetic mice. In addition, in order to determine the effect of aqueous CN extract on insulin resistance, euglycemic hyperinsulinemic clamp has been performed and the endogenous glucose production has been analysed using a perfusion of perfusion of 3-3H glucose.

Results: Our present study has shown that aqueous CS extract evoked a potent hypoglycaemic activity in MLDS diabetic mice. In other hand, perfusion of 3-3H glucose demonstrated that this hypoglycaemic activity was accompanied by a decrease in basal endogenous glucose production (EGP). EGP was lower in CS-Treated group when compared to the control group, 17.5±2.4 vs. 27.2±7.1 mg/kg.min-1 ($p<0.001$) respectively. Using the euglycemic hyperinsulinemic clamp technique, the study demonstrated that CS treatment also improves insulin sensitivity in peripheral tissues.

Discussion & Conclusion: We conclude that the hypoglycaemic activity of aqueous CS extract is due, at least in part, to the inhibition of basal endogenous glucose production and the improvement of peripheral insulin resistance in MLDS diabetic mice.

mohamed.eddouks@laposte.net