

THE CARDIOVASCULAR ACTIONS OF THE VOLATILE OIL OF THE BLACK SEED (*NIGELLA SATIVA*) IN RATS: ELUCIDATION OF THE MECHANISM OF ACTION

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Abstract—1. The effects of the volatile oil (V.O.) of the black seed (*Nigella sativa*) on the arterial blood pressure and heart of urethane-anaesthetized rats were investigated and the effects were compared with those of its constituent thymoquinone (T.Q.).

2. Intravenous administration of V.O. in the dose range ($4\text{--}32 \mu\text{l kg}^{-1}$) or T.Q. ($0.2\text{--}1.6 \text{ mg kg}^{-1}$) to rats decreased the arterial blood pressure and the heart rate in a dose-dependent manner.

3. The effects of V.O. were significantly antagonized by treatment of the animals with cyproheptadine, hexamethonium atropine and by spinal pithing.

4. Treatment of the animals with reserpine ($5 \text{ mg kg}^{-1} \text{ day}^{-1}$ for 2 days) significantly antagonized the cardiovascular depressant effects induced by 4 and $8 \mu\text{l}$ of V.O. kg^{-1} but not those induced by the larger doses.

5. T.Q.-induced cardiovascular depressant effects were significantly antagonized by atropine and cyproheptadine but not by reserpine.

6. The results suggested that V.O.-induced cardiovascular depressant effects were mediated mainly centrally via indirect and direct mechanisms that involved both 5-hydroxytryptaminergic and muscarinic mechanisms. The direct mechanisms may be due to the presence of T.Q. in the V.O. The V.O. seemed to possess the potential of being a potent centrally acting antihypertensive agent.