ENDOTHELINE RECEPTOR BLOCKER, A SELECTIVE AND MORE POTENT ANTAGONIST FOR *ATRACTASPIS* ENVENOMATION THAN THE SPECIFIC ANTIVENOM

M. A. ABD-ELSALAM

THE NATIONAL ANTIVENOM AND VACCINE PRODUCTION CENTER, RIYADH, SAUDI ARABIA
E-MAIL: abuzeidm@hotmail.com & abuzeidm@ngha.med.sa

ABSTRACT

Preparation of an antivenom against *Atractaspis* was a very lengthy and expensive process.

In this study, an alternative treatment was tested using: 1-Nitroglycerin to antagonize the coronary vasospasm induced by the venom, 2- Bosentan to block the endothelin receptors, since there is a similarity in structure and effect between the toxic fraction of the venom *(Sarafotoxins*) and *endothelins* and 3- The specific Antivenom in comparison to nitroglycerin and bosentan.

Pretreatment of rabbits with nitroglycerin, antivenom or bosentan completely protected all rabbits from the minimal lethal doses of venom or its toxic fraction. On the other hand, injecting any of the three drugs a few minutes after injecting one minimal lethal dose (MLD) of the venom or the toxic fraction and at the first signs of ischemia, just before death, showed that bosentan completely saved all rabbits. In case of nitroglycerin all rabbits died and in case of antivenom, only 5 rabbits were rescued.

It is clear that bosentan is superior to the specific antivenom in protecting rabbits; this may be due to its higher affinity to *endothelin* receptors than *sarafotoxins.*

This preclinical study shows a good potential in using bosentan as a selective antidote for *atractaspis* envenomation, especially in the African continent.

Keywords: Atractaspis, Sarafotoxin, Antivenom, Bosentan, Nitroglycerin