

CARDIO PROTECTIVE EFFECT OF BRUHAT VATA CHINTAMANI RASA IN EXPERIMENTAL MODEL OF ISOPROTERENOL INDUCED CARDIOTOXICITY IN MALE SPRAGUE DAWLEY RATS

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The biochemical and histological changes developed after ISO administration in rats resembles with those observed in human myocardial infarction (Milei et al., 1978). Hence ISO-induced cardiotoxicity in a rat model has been used in this study for better understanding of pathogenesis of ischemic heart disease and the role of herbomineral formulation containing traditional herbs in the prevention of progression of ischemic heart diseases.

Bruhat Vata Chintamani Rasa treatment prevented Isoproterenol (ISO) induced changes in the electrocardiogram and haemodynamic parameters in animals.

Treatment with Bruhat Vata Chintamani Rasa at high dose as well as at low dose significantly improved the rate of ventricular contraction when compared with disease control animals.

Both PR and QT intervals are prolonged in case of myocardial infarction, ischemia and abnormality in the conduction system. ISO treated animals showed significant elevation in PR and QT intervals. ISO treated animals showed significant elevation in ST segment which is an indication of myocardial infarction. Treatment with Bruhat Vata Chintamani Rasa significantly shortened the PR and QT intervals and prevented the elevation ST segment.

QRS duration represents how fast ventricles depolarise. ISO treated animals showed fast ventricular depolarization which is because of

positive inotropic effect that results in decrease in QRS duration. Treatment with Bruhat Vata Chintamani Rasa prevented rapid depolarization showed a significant increase in QRS duration.

Thus it can be concluded that Bruhat Vata Chintamani Rasa improves the conduction of electrical impulses as well as the ventricular contraction in ISO treated animals.

Bruhat Vata Chintamani Rasa treatment reduced the levels of cardiac marker enzymes in serum which shows its preventive effect against ISO-induced myocardial damage.

Most importantly, Bruhat Vata Chintamani Rasa prevented the loss of anti-oxidant enzymes from the myocardium and also improved the serum levels of Adenosine Monophosphate activated Protein Kinase (AMPK) and Silent information regulator I (SIRT1)

Histopathological findings provide evidence for protective effect of Bruhat Vata Chintamani Rasa treatment against myocardial fibrosis and necrosis.

Hence, it can be concluded that Bruhat Vata Chintamani Rasa offers cardio protection in Isoprenaline or isoproterenol (ISO) induced cardio-toxicity / cardiac damage.