

LETTER TO THE EDITOR

## EFFECT OF SOLAR ECLIPSE ON ISOPROTERENOL TREATED RATS

(Received on February 2, 1981)

Sir,

It is believed that exposure to total or partial solar eclipse may lead to exacerbation of an ailment or precipitate an acute attack of a disease. If this is true, patients with myocardial infarction and those predisposed to such condition stand a high health risk during such astronomical event. With the aim to provide evidence for or against such belief, it was planned to study the effect of exposure of rats to partial solar eclipse of 16th February 1980 after challenging them with a single dose of isoproterenol (IPT) instead of 2 consecutive doses. IPT induces graded lesions of myocardium, when administered in serial doses in rats (6).

Twelve male albino rats (experimental) weighing between 180 to 200 gm were challenged with isoproterenol (85 mg/kg, sc) 24 hrs prior to the onset of eclipse. Control group of twelve male rats received distilled water at the same time. From each group, six rats were exposed to the exterior by keeping their cages on an open terrace throughout the duration of eclipse (2.30 p.m. to 5.00 p.m.) whereas the other six from each group remained in their home cages in the room.

Electrocardiogram (ECG) were recorded from each rat before and after eclipse as described earlier (1). Gross and microscopic examination of the hearts of all animals were carried out after the eclipse. Lesions were graded according to the method of Rona *et al.* (6).

Rats challenged with IPT showed ECG changes indicating grade I lesion (1). Evidence of further aggravation of the lesion on the basis of ECG findings or gross and microscopic examination was absent in these animals, following their exposure to eclipse. Control animals did not show any changes after eclipse.

It is reported that meteorological (5), geomagnetic (2,3,4) and other changes during eclipse may affect biological life adversely. But the findings in this study demonstrate that eclipse *per se* may not be effective in advancing a myocardial lesion. These findings cannot be entirely extrapolated to clinical situation because of difference in species, pattern of coronary circulation, and factors responsible for the production of myocardial lesion (7).

## ACKNOWLEDGEMENTS

Our thanks are due to Dr. M.N. Ghosh, Director and Dr. S.S. Gambhir, Head of the Department of Pharmacology, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry.

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