

Communications

Heart Attack as a Biological Effect of Geomagnetic Fluctuations

SATYA DEV VERMA & VIJAYA SINHA

Department of Physics, Gujarat University,
Ahmedabad 380 009

and

MADHU NIGAM*

Bombay Hospital, Bombay

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The number of heart patients, admitted everyday to the Intensive Cardiac Care Units (ICCU) of three hospitals in Bombay, has been found to increase with increase in the daily K_p sum values (measure of geomagnetic activity) for the year 1976. The correlation coefficient is found to be 0.72 ± 0.15 .

Many scientists from different parts of the world have started finding correlation between sudden geomagnetic fluctuations and some biological phenomena¹⁻⁴. These have motivated us to look for similar correlation in the case of heart patients.

In the present communication, an effort has been made to find a possible correlation between the number of heart patients admitted to hospitals per day and the corresponding K_p sum values. The working of the human heart is a biological activity, partly controlled by electromagnetic phenomena. Sudden fluctuations in the geomagnetic field due to magnetic storms produce electromagnetic disturbances all over the earth. There might be some indirect effect due to these sudden changes on the functioning of the heart. Those persons who are suffering from heart disease or those who have weak heart, are likely to be affected more by such disturbances. With this aim in mind, data were collected on the total number of heart patients admitted daily in the Intensive Cardiac Care Units (ICCU) of three hospitals in Bombay, and were compared with the corresponding daily K_p sum value for the year 1976. The results are discussed below.

Data on the number of heart patients admitted to the ICCU was requested from various hospitals. Such data were, however, obtained from only three

hospitals in Bombay (L T M G Hospital, Bombay Hospital and Sir Harkisondas Nurrottamdas Hospital) for the year 1976. The method of analysis of the data on heart patients is the same as that adopted by Verma *et al.*³ and is briefly described below with the results.

Fig. 1 shows the plot of average K_p sum values versus the number of patients admitted daily to the ICCU of the three hospitals in Bombay for the year 1976. A linear relation represented by a straight line is obtained using the least square fit method. The slope and the intercept of the straight line are found to be 0.70 ± 0.17 and 14.00 ± 1.10 respectively. A considerably large correlation coefficient is found which is 0.72 ± 0.15 .

From Fig. 1, it is clear that there are more heart patients on the days when there are large and rapid fluctuations in the geomagnetic field.

It may be worth while pointing out a recent work⁴ on the data of erythrocyte sedimentation rate (ESR) in blood donors which shows that greater ESR delays are found on days having a large value of A_p sum (a parameter related with K_p and representing geomagnetic activity). It has also been shown that the blood of cardiovascular patients reacted distinctively in the experiments made by modelling strong magnetic storms, whereas no effect in the ESR of normal blood donors was found.

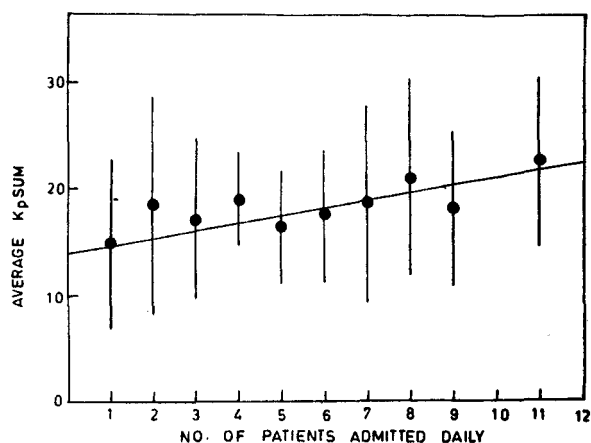


Fig. 1—Plot of the average daily K_p sum values versus the number of patients admitted to ICCU daily in the three hospitals of Bombay in 1976 [Point at 11 is an average for 10, 11 and 12 patients admitted daily.]

*Present address: Jaslok Hospital, Bombay.

Such findings indicate that heart patients may get affected by sudden changes in the geomagnetic field. If this effect is substantiated by more data then it may be advisable for ICCU of hospitals to observe caution and provide extra care to the heart patients when there is likelihood of getting a magnetic storm or whenever a magnetic storm is in progress.

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