

J o u r n a l o f
**EUROMED
PHARMACY**

E D I T O R I A L

Perceptopharmacology may be defined as the effect of perceptions such as smell, environment (a hospital ward or a disco) and distress on drug action. The philosophy of perception as it influences life has amply been investigated as has its influences on diseases such as cancer development and prognosis.

The care exerted today in providing the 'right' drug at the 'correct' time to the 'real' patient is justified and accepted as an indispensable professional service. We have also shown through studies carried out by our department that 'talking' to the patient also reduces side effects. Investigating a group of 32 breast cancer patients we found that there was significantly less ($p < 0.05$) nausea in patients who were advised verbally and through the distribution of specially prepared literature.

The investigation of chronopharmacological response independent of perception of sensory features such as alternating sunlight and darkness requires further studies. The cyclic occurrence of epilepsy is associated with menstruation and referral to the cyclic moon changes is sometimes made as an indication of the 'time' when an attack of epilepsy could be predicted. In Malta epilepsy is often referred to as '*tal-qamar*' - disease of the moon. Methods of treatment of epilepsy could be perhaps improved by applying chronopharmacological knowledge.

William J.M. Hrushesky, Professor of Medicine and Oncologist at Albany Medical college in New York, addressing the New York Academy of Sciences in 1994 stated that "Time is Everything - in sickness, as in health, rhythm is a critical factor. Effective treatment must work with the body's clocks, not against them." Methods and examples to determine the 'therapeutically wise' time of the day when a drug should be administered are given for areas such as cardiovascular, allergy, asthma and cancer treatment.

The benefits of timing can now be better understood with the advancements in Molecular Biology. The level of DNA synthesis in people is highest in the first half of the working day, the reverse of its level in mice! This may yet be another explanation in addition to that of pharmacogenetics to justify inter-patient variation which is actually then an intra-patient variation of drug action.

This idea of chronopharmacology was brewing in the mind and thoughts of a number of scientists for the last twenty years. The development of biotechnology leads to further possible practical applications of this science. The concern for the adverse effects of glucocorticosteroids and the benefits of taking into consideration the cyclic diurnal differences, and the influence of shift work on the variations of hormone concentration and other biogenic substances is a classical example of the importance of chronopharmacological knowledge in clinical applications. It is the time to extend the chronopharmacological investigations to the molecular level especially in such cases as chemotherapy. No longer can the convenience of the staff be the deciding factor when a drug is given - the pharmacist has a new compliance exercise to do - an important and definite one in planning dosage regimens.

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