



The protective effect of granulocyte colony stimulating factor (GCSF) on the Phenobarbital toxicity in mouse Fetus

TANNAZ BOVAND, HOSSEIN VATANPOUR*, ZAHRA MOUSAVI,
Baharak Mohammadzadeh Asl

Department of Pharmacology & Toxicology, Faculty of Pharmacy ,Pharmaceutical Sciences Branch, Islamic Azad University ,Tehran - Iran (IAUPS) .

Toxicology and Pharmacology Department, School of Pharmacy, Medical Science University of Shahid Beheshti, Tehran, Iran

Introduction:

GCSF is a drug which is prescript for growing stimulate either in some of immune system diseases or anti-concern drugs users. With attention to its stimulate factor in cellular growth, probably it can plays an important role in growth compensation in teratogenicity defect in some of drugs. In this study, we considered GCSF effects on different organs of pregnant mice, then according to safe doses for mother and fetus, we applied it either as growing stimulator or neutralize factor about negative effects of teratogenicity drugs like Phenobarbital .As you know phenobarbital is a drug which is belongs to barbiturates family and it widely use in nervous diseases because of its anticonvulsant and calmative effects especially in treatment about epilepsy attacks. Using of this drug during pregnancy period can increase the possibility of abnormalities occurrence like cleft palate and heart abnormalities in infants, weight reduction in birthday for infants whom their mothers have used Phenobarbital drug in the past.

The purpose of this study is considering about the possibility of protective effect of GCSF against teratogen effects of Phenobarbital in mice fetus.

Method of use: we injected 120 mg/kg of Phenobarbital dose within GCSF in different doses to mice in 9 day of gestation and then we brought out fetuses from mice uterus in 15 day of gestation and consider it by microscopic and macroscopic methods.

Findings: in this study, although, we observed that GCSF equal to 1.63 $\mu\text{g}/\text{mL}$ dose has been amend cleft palate in mice fetus because of Phenobarbital ($P < 0.05$), but we did not observe any difference in cleft palate occurring or its amending in mice fetus at GCSF using with another doses (3.25, 7.75, 12, 15 $\mu\text{g}/\text{mL}$).

Results: the results of our study showed that GCSF may affect on teratogenicity effects of Phenobarbital in cleft palate and will prevent its occurrence probably.

Key words: GCSF, Phenobarbital, prevention, mice fetus