SUMMARY AND CONCLUSIONS

1. The present study was conducted to evaluate the effects of DZP administration during pregnancy on the development of brain. The study was conducted using Wistar albino rats as the non-human mammalian model.

2. The Wistar albino rats were classified into 5 different groups based on the period of drug administration. Gestational period in the rat is 21 to 22 days. During this period maximum alterations were seen when the drug was given during 3\textsuperscript{rd} and 4\textsuperscript{th} trimester rather than when the drug was administered on 1\textsuperscript{st}, 2\textsuperscript{nd}, and 3\textsuperscript{rd} trimesters individually; however they are not completely spared from lesions.

3. Behavioural assessment revealed that the drug treated animals were retarded in the motor or learning ability, which was obvious at particular period of age not seen later.

4. Histological study showed extensive gliosis and infiltration in the brains of drug treated animals, though exact mechanism was not known for this pathology, but the possible causes were discussed.
5. Histomorphometric study clearly demonstrate the shrinkage in the neonatal cortex of the DZP treated animals of all the groups, which resulted in neuronal compactness or coming close together, which may be also facilitated by less amount of connective tissue.

6. Genotoxic effect of the drug was analysed. Results indicate that DZP have some genotoxic effect, which leads to chromosomal aberrations in the form of polyploidy and micronucleus. Thus DZP is having genotoxic effects on the developing embryo.

7. There was a drop in the level of sodium and potassium in the brain and serum. This may be due to the role of DZP in greater doses inducing desensitisation of gamma-aminobutyric acid A (GABA(A)) receptors.

The growing experimental evidence, that early developmental exposure to centrally acting drugs (particularly during a period of development) can induce persisting neural and functional alterations in the offspring’s, necessitates a careful evaluation of this literature with respect to its relevancy to humans. Functional alterations may not be expressed until childhood or later stage of life is reached. A major problem consequent to prenatal drug exposure may be a difficulty for the organism to meet specific challenges. Such information should guide future clinical investigations.