Reproductive Toxicology

Kevin Jacobs*

Department of Pharmacy, UCL College of Pharmacy, London, United Kingdom

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Introduction

Reproductive toxicity

Since a decade, human reproductive disruption by various factors including xeno biotics such as drugs, occupational, and environmental exposures leading to reproductive toxicity which is has become a growing concern. Reproductive toxicity de ned as: "the antagonistic e ects of a substance on any characteristics of the male or female sexual reproductive cycle, together with an impairment of reproductive function, and the induction of adverse e ects in the embryo, such as growth retardation, malformations, and death which would interfere with the production and development of normal o spring that could be reared to sexual maturity, capable in turn of reproducing the species [1]."

Classes of reproductive toxicity include

- Male fertility
- Female fertility
- Parturition
- Lactation

Developmental toxicity

According to Globally Harmonized System the developmental toxicity is de ned as, "adverse e ects induced during pregnancy, or as a result of parental exposure," which "can be manifested at any point in the life span of the organism". e exposure to speci c exogenous substances prior to conception in either of the parent, exposure during gestation, or exposure during prenatal or postnatal development from birth to sexual maturation may result in developmental toxicity. Developmental toxicity has varied end points such as impulsive abortions, still-births, deformities, and early postnatal mortality, reduced birth weight leading to structural anomaly, altered growth, functionally de cit, and death of the developing organism [2].

Classes of developmental toxicity include

- Mortality
- Dysmorphogenesis (structural abnormalities)
- Alterations to growth
- Functional impairment.

Due to the fact that, male and female reproductive anatomy and biologic mechanisms are di ering, they have a speckled result for reproductive toxicants. It is therefore essential to recognize reproductive toxins and their mechanisms and sites of action and to learn about species (especially human) vulnerability to them. Reproductive toxicants or repro toxicant are chemical, biohazardous (e.g., viruses), or physical (e.g., radiation), agents that can impair the repro-Drugs of abuse and chronic medication may have adverse e ect on the fertility potential of men by disturbing HPG axis, gonadotoxic activity, or by upsetting sexual performances (ejaculation, erection, and libido) [3]. Prolonged treatment with immunosuppressive drugs (sirolimus

the growth and development of embryo, and may cause postnatal problems. e compounds like, mercury, lead, other heavy metals, and organic compounds viz., formamide are some of the well-known examples of embryotoxins. Additionally, agents which can interrupt or leads to deformity in the development of an embryo or fetus are called as teratogens, which have the potential to miscarriage or cause children with birth defects.

References

1. Reed KE, Camargo J, Hamilton-Reeves J, Kurzer M, Messina M (2021) Neither soy nor isofavone intake affects male reproductive hormones: An expanded and updated meta-analysis of clinical studies. Reprod Toxicol 60-67.
2. Omolaoye TS, Adeniji AA, Cardona Maya WD, du Plessis SS (2021) *SARS-COV-2* (Covid-19) and male fertility: Where are we? Reprod Toxicol 65-70.
3. Bowman CJ, Ag Toxico(17004400 0 n CJ, 00C00T24E004)]TJ0 .742