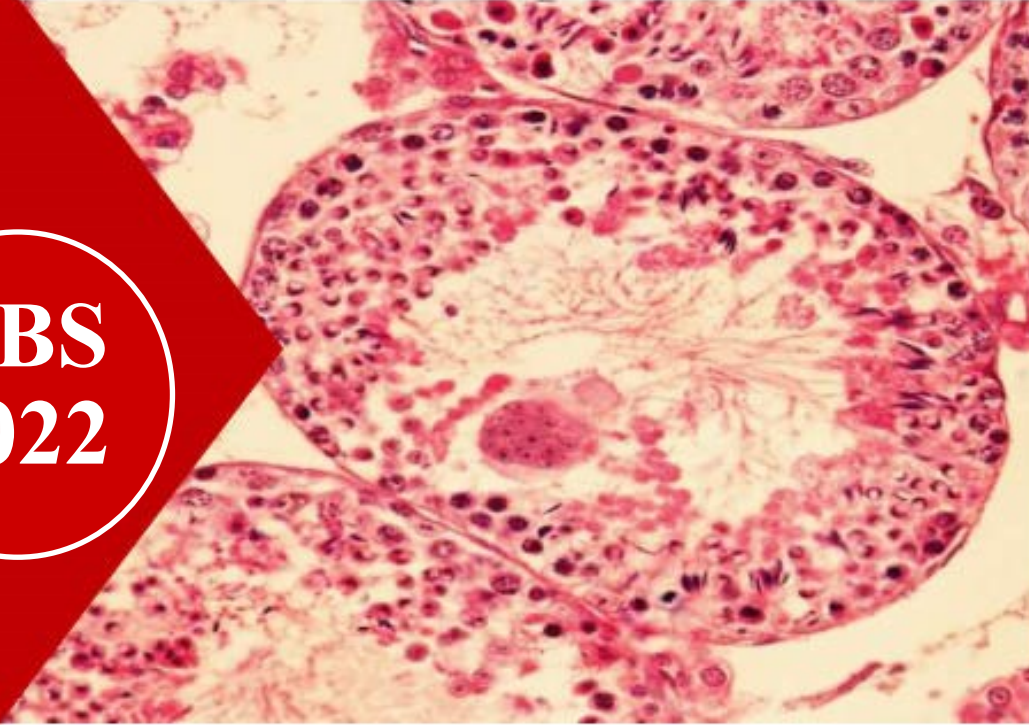




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**RBS
2022**



2nd International Conference on
Research in Biological Sciences

24th December 2022

Virtual

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CALRD is a proud hosting partner of the 1st International Conference on Research in Biological Sciences. CALRD is excited to be a part of a conference that allows scholars and practitioners in education from around the world, and especially in Pakistan, to present their research and their practical ideas in order to enhance education.

CALRD is working on a mission to promote research and development culture in Pakistan. RBS2022 is the part of our 100 seminar project.

We hope during your time at the conference that you take the opportunity to engage with your peers to discuss your ideas for research and practice and that you ask questions of the presenters. There will be plenty of opportunities for collaboration.

A handwritten signature in blue ink, appearing to read 'Rao Kashif', is positioned above a horizontal line.

Dr. Rao Kashif

CEO/Managing Director
Center to Advance Level Research and Development (SMC-PVT) Ltd
Pakistan

Disruption of Female Reproductive System due to Pesticide Exposure

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During the last several decades there have been widespread uses of potent substances that, although effective in their intended use, have also been suspected of being harmful to reproductive health. Pesticides are mainly utilized in agriculture for crop protection, often replacing the natural processes on which agricultural production had previously depended. More than 140,000 tons of pesticides are used annually in the European Union for agricultural purposes only. Pesticides may differ according to their chemical structure, their mechanism of action and the toxicity they exhibit, but typically each pesticide consists of one (or more) active ingredient, which exerts the pesticidal activity, and an inert ingredient, which is inactive and helps in handling the active ingredient. Over 700 active ingredients are in use worldwide as pesticides, each with distinct chemical and toxicological properties. There has been rising concern in many developed countries about the adverse effects of pesticides on human reproduction, ranging from female and male subfertility to abortion, stillbirths, birth defects and malformations. They may cause reproductive toxicity with direct damage to the structure of the cells or as a result of biotransformation into metabolites, or interference with processes necessary for the natural homeostasis and equilibrium. Hormonal balance is important to preserve female reproduction and maintain fertility. This balance can be disturbed by changing levels of estrogen or progesterone. Estrogen levels may be decreased by several pesticides. The female ovarian cycle is the result of a balanced cooperation between several organs and is determined by a complex interaction of hormones. Ovarian cycle irregularities include disturbances in the ovarian cycle and ovulation problems. Muller et al. found that hexachlorobenzene can block ovulation in rhesus monkeys. In this study, low estrogen levels were found during anovulatory cycle. Baliger et al. found a decrease in the number of healthy follicles and an increase in the number of atretic follicles in mancozeb treated rats. Methoxychlor accelerates embryo transport rate in rats and induces preimplantation embryonic loss, perhaps due to this acceleration. The insecticide lindane modifies sperm responsiveness to progesterone in vitro, a physiological effect of the acrosome reaction, which could be a cause of infertility in women exposed to lindane. Two studies examined the effects of pesticide exposure on the menstrual cycle. Both found associations between serum levels or a metabolite of DDT and short cycles and undefined 'menstrual disturbances'. A recent study observed that women who currently used pesticides experienced longer menstrual cycles and

increased odds of missed periods compared with women who never used pesticides. In addition, women who used probably hormonally active pesticides had 60–100% increased odds of experiencing long cycles, missed periods, and intermenstrual bleeding compared with women who had never used pesticides. In a study in the USA, infertile women were observed to be three times more likely to ever having been exposed to pesticides and nine times more likely to ever having worked in agriculture. A number of studies reported that among women occupationally exposed to pesticides and/or working in the agricultural sector the risks of spontaneous abortion and stillbirth seemed to be significantly increased. In addition, two reviews concluded that there are numerous indications that exposure to pesticides may contribute to spontaneous abortion and/or stillbirth, but it is unclear whether this should be considered as an endocrine disrupting effect. In a well-conducted Finnish study of women in agricultural occupations, the investigators found that exposure to pesticides during the first trimester of pregnancy nearly doubled the risk of cleft lips and palates in offspring. A slightly increased risk for central nervous system defects was also observed.

SARS-COV-2 pandemic impact on pregnant females in Pakistan

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Severe acute respiratory syndrome corona virus 2 is the RNA form of strain that belongs to the large family of coronavirus (Covid 19). Virus spreads by emitting of infectious person's cough or sneezing droplets. Presently, SARS-COV-2 case studies in pregnant females have concluded from the years 2020 to 2022 in Pakistan (Karachi, Rawalpindi and Islamabad). It was observed that during third trimester, virus cause severe effects at the age of 20 to 49 years old. In Karachi, 377 cases are showed that it had face alarming situations during this whole pandemic than other cities. SARS-COV-2 prevalence impact on maternal as well as fetus health. Their variants influence adverse mental health disorders, emotional distress, psychological illness, post abortions, malnutrition, micronutrient deficiencies, anxieties, dizziness and miscarriages in pregnant females. Whereas, fetal abnormalities, neonatal morbidity, baby boom and early births in infants. Still it needs keenly work related to its diagnosis, treatments.

Keywords:

SARS-COV-2, Pregnant females, Trimester, Miscarriages, Abnormalities

Smog component PM_{2.5} association with GDM in pregnant females: evidence from review study.

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Abstract

The exposure of particulate matter 2.5 micrometer (PM_{2.5}) had relation to gestational diabetes mellitus (GDM). GDM is a type of diabetes that is diagnosed during pregnancy and caused adverse health effects on the mother and fetus. PM_{2.5} is a component of smog. The retrieved data from last five years demonstrate the relationship between GDM-PM_{2.5}. For this analysis, the data considered from fifteen research articles. This research was previously conducted in polluted cities in china, Australia, America, Florida, Iran, and Texas. Increased display of particulate matter 2, 5 um in diameter was somehow associated with the risk of GDM, particularly in the second trimester and stronger in the twenty-first and twenty-fourth gestational weeks. In this study, 618,489 individuals were observed and total of 43737 females was affected with GDM. The prevalence for GDM was 7.08% and their death was not mentioned. Thus, a systematic review of the previous evidence demonstrates the association between GDM and PM_{2.5}.

Keyword

PM_{2.5}: Particulate matter, GDM: Gestational diabetes mellitus, Air pollution, Smog, Women health