**Psychopharmacoteratophobia**

“Psychopharmacoteratophobia (Psychofarmakoteratofobi) is the fear or avoidance of prescribing psychotropic medicine to a pregnant woman on a given indication in anticipation of foetal malformation”. It is rooted in the tragedy associated with thalidomide use, and is increasing due to the inability to predict accurately, strict legal provision of consumer protection, ethical and legal issues involved and pitfalls in the available evidence of teratogenicity. In the Indian setting, the physicians face more challenges as the majority of the patients may ask them to decide what is best for their health. Most guideline emphasis more on what not to do than what to do, and the locus of decision is left to the doctor and the patient. In this review, we have focused on relevant issues related to psychopharmacoteratophobia that may be helpful to understand this phenomena and help to address the deprivation of a mentally ill woman from the required treatment.

**Key Messages**

1-Physicians in India are more likely to face psychopharmacoteratophobia.

2-Issues related to psychopharmacoteratophobia are distinct in India.

3-A Clear guideline is required to address psychopharmacoteratophobia in Indian setting.

 **Key words:**

Drug attitude; Attitude of Health Personnel; Abnormalities-Drug-Induced; Teratogenesis; Teratogens/toxicity.

**Introduction**

Teratophobia is an excessive fear of giving birth to a malformed child; while psychopharmacoteratophobia (Psychofarmakoteratofobi) is the trepidation of prescribing psychotropic medicine to a pregnant woman on given indication in anticipation of foetus malformation1,2. The word has Greek origin, and is the combination of four words: psȳkhē(breath, life, soul);pharmakon(drug); teras (monster) and phobos (fear). This phenomena can be traced back to the thalidomide tragedy, that first launched in 1950s, for morning sickness and as a sedative during pregnancy. Use of this medication caused phecomalia in about ten thousand newborn and was banned since 1961 in most part of the world3 .

Five percent of all live births have major congenital anomalies. In only 0.25% of all births, the major congenital anomalies can be attributed to a medication4,5. Benzodiazepine is the commonly used psychotropic drug (85% of all psychotropic) during pregnancy6. In comparison to the general population, the teratogenic event increase is by 0.2 % with benzodiazepine, 1-3 % with antidepressant, 0.5% with lithium, up to 5% with carbamazepine and up to 10 % with valproate7,8,9,10,11. Prevalence of malformation in India is about 2 percent12,13,14.

Approximately half a million women become pregnant each day, and up to 35% of them use a psychotropic medication at least once before delivery15. Fifteen to twenty percent of pregnant women suffer from mental illness, out of which 86 % remained untreated and psychopharmacoteratophobia is one reason for the deprivation from treatment16,17,18,19.

Most of the published reports are case reports, case series, prospective or comparative cohort studies, case control studies, prescription data base studies and national birth registries done in western countries. Except for case report, there is no comprehensive study from India about psychotropic drugs related malformation. Most Indian psychiatrists agree that in India the incidence of malformation associated with psychotropic medication may be less compared to western population; due to the less dose requirement for Indian patients, high discontinuation of psychotropic medication during pregnancy, availability of good social support and less population psychiatrists’ ratio. Obstetricians prefer to withdraw psychotropic medication (due to the risk involved) resulting in development of withdrawal syndrome, self-medication with complementary medicine, substance abuse and termination of pregnancy20. In India, prescription of psychotropic drugs during pregnancy face many barriers such as stigma of mental illness, fear of adverse outcome of pregnancy, ambiguous guidelines, biased harm reporting, and fear of legal issue, misconception of risk, media reports and lack of clear professional guidelines21.

Most guidelines emphasis more on what not to do, and the locus of decision left to the doctor and patient. In this review, we have focused on relevant issues related to psychopharmacoteratophobia that may be helpful to understand this phenomena and help to address the deprivation of a mentally ill women from required treatment.

**Pitfalls in the available evidence**

**A. Drawback of previous human teratogenic studies**: Concept of first trimester as critical period is outdated. Age of the gestation is calculated from beginning of last menstrual cycle, and with this calculation blastocyst gets a place in the uterus during the fourth week. Thus, only the second and third months of first trimester can be considered as a critical period. However, for some congenital anomalies, the critical period exceeds the end of the third month. Most studies on malformation of newborn did not consider the chemical structures, routes of administration and indication, and reasons of the teratogenic evaluation22.

**B. Memory bias**: The birth of a child with an anomaly is traumatic and mothers may attribute to drug use during pregnancy, while ignoring infection, fever and other medical conditions known to cause similar malformation22.

**C. Benefits of medication use is underestimated-** Published literature is more in favour of not giving psychotropic medication during pregnancy, that may result into unfavourable impact on the outcome of pregnancy and maternal & foetal mental health22.

**D. The teratogenic risk of medication is overemphasied:** The most published literature addressing relationships of medication and malformations was carried out decades ago when traditional gender role was emphasised, and malformation or disability was associated with curtailed social activity, stigma and superstitions. Other reasons of exaggeration are an extrapolation of animal finding to human foetus despite species specificity, higher false positive finding due to methodological shortcoming and recall bias, publication bias of positive finding or selected case report, and self defensive attitude of health care professionals regarding use of medication during pregnancy22.

**Factors contributing to psychopharmacoteratophobia**

In India, paternalistic model of doctor-patient relationship is prevalent, and patients expect & request the doctor to decide the best treatment. Commonest but difficult question, a pregnant patient with mental illness asked is, whether she should continue the medication. In the absence of an accurately predictable test, answering such question is constrained by clinical, legal, ethical, psychosocial issues.

**1-Clinical issues**

A-Impact of psychotropic medication in pregnancy outcome: Psychotropic medications that are commonly reported with teratogenic effect are-

1-Benzodiazepines may increase the incidence (<1%) of cleft lip or palate, infantile hypotonia; neonatal abstinence syndrome.

2-Selective serotonin/ norepinephrine reuptake inhibitors and tricyclic antidepressants may increase malformation by 1-3% compared to the general population8.

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