
Sex Determination

Mahima Rajesh Rawtal
G.H. Raisonni Law College, Nagpur

Abstract

The developments in the technology in the field of sex determination has become a major social and scientific problem in the present scenario. Sex determination has lead to cases of female foeticide majorly in a country like India. Pertaining to which the government decided to prohibit the practice of sex determination in 1961. After which an Act to control such activities is passed. Through this article the researcher have tried to focus on the Pre-Natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act, 1994. It further throws light on the background, social & scientific context of sex determination.

Introduction

The Pre-Natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act, 1994 (PNDT Act), was enacted to stop misuse of preconception and prenatal diagnostic techniques for determining the sex of the foetus and to stop disclosure of the sex to the pregnant woman or her relatives. In 2003, the PNDT Act was amended and renamed because the Pre-Conception and Pre-Natal Diagnostic Techniques (Prohibition of Sex Selection) Act, 1994 (PCPNDT Act), so as to strengthen the PNDT Act and note of the event of preconception sex-selection techniques.¹ The amended legislation places a ban on sex selection before and after conception and regulates the utilization of prenatal diagnostic techniques for detection of certain abnormalities or disorders. The law doesn't discuss abortion or providers of abortion, which are distinctly regulated under the Medical Termination of Pregnancy Act, 1971 (MTP Act).

Background

From the mid 80's to the first 90's we were a neighborhood of a serious campaign against sex determination and sex pre-selection, initiated in Mumbai by the Forum against Sex Determination and Sex Pre-selection (FASDSP). With the straightforward availability of ultrasound machines², it had been becoming growing familiar in states as like Maharashtra to urge to understand the sex of the fertilizing eggs and use the knowledge for managing an

¹ Anuradha Mascarenhas, *Sex Determination: An old law, a new debate*, THE INDIAN EXPRESS (Aug. 24, 2021), <https://indianexpress.com/article/explained/sex-determination-an-old-law-a-new-debate/>.

² *Sex Determination in India- Illegal and Fatal*, KIMSHEALTH, (Aug 25, 2021), <https://www.kimshealth.org/trivandrum/blog/sex-determination-in-india-illegal-and-fatal/>.

abortion if the embryo happened to be woman.

Social Context

While social awareness was seen as crucial, the role of a law in preventing the practice of sex determination was also seen to be important. The legal route was seemed to be a big thanks to define the practice as a crime/unethical. Pressure from women's groups and FASDSP resulted in legislation in Maharashtra State in 1986 to stop sex determination. However, this Act was found lacking in many aspects and therefore the campaign gained momentum for a requirement for central legislation. Saheli played a significant role within the campaign and also deposed ahead of the joint Parliamentary Committee found out in 1992 regarding provisions within the legislation as there was a significant need felt to plug the lacunae within the Maharashtra State Act. Finally, the Pre-Natal Diagnostic Techniques (Regulation and Prevention of Misuse) (PNDT) Act was gone by the Centre in 1994.³

Scientific Context

The significance of sex identification in biology and in teratology. Teratogens could be gender-specific and might cause lethality or congenital malformations that are hooked in to embryonic sex. Probably gender-specific effect of teratogens is occasionally established because in most studies embryonic and fetal genetic sex isn't determined. The power to work out fetal sex will allow a far better understanding of the possible gender-related effects of teratogens and their mechanism of action.

It is vital that sex identification techniques are going to be non-invasive and when needed are going to be performed even on highly degraded non-invasive samples like feces and hair or different organs from which some tissue are often spared. Non genetic routine to regulate fetal and neonatal sex were proven to be to an overall inaccurate. Estimation of ano-genital distance contrast is subjective, has an overlay zone, and is accurate only in about half of the cases. Even though Barr bodies were subtracted within the amnion and liver cells of rat embryos and fetuses during days 12.5–20.5, this cannot serve for accurate sex determination since they were detected during a relatively small proportion of subjects and in both sexes. They were detected in 20–50% within the amnion and 10–51% within the liver of females. Moreover, they were also detected during a very minor proportion of males: 0–7% within the amnion and 0–8% within the liver.⁴

³ Dr. Ishita Chatterjee, *The evil of female foeticide in India: Causes, Consequences and Prevention*, LEGAL SERVICES INDIA (Aug 22, 2021), <https://www.legalserviceindia.com/legal/article-777-the-evil-of-female-foeticide-in-india-causes-consequences-and-prevention.html>.

⁴ Anand S Ahankari, *Banning of fetal sex determination and changes in sex ratio in India*, THE LANCET GLOBAL HEALTH (Aug. 23, 2021), [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(15\)00053-4/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(15)00053-4/fulltext).

Hence, genetic methods for the detection of gender-related genes and/or chromosomal studies are the foremost authentic methods.

Conclusion

Sex differences have baffled humanity for a really while in both scientific and social contexts. A radical apprehension of the technique determining sexual development has been achieved through the utilization of advanced scientific techniques developed within the 20th century.

However, surprisingly, the network of genes that control sex determination remains incomplete, and comparatively poorly understood. Further research is probably going to seek out novel genes involved in gonadal development and to point out the complexity of the mechanisms controlling sexual development. It appears that the cascade of events resulting in the sex determination is far more complicated than originally imagined. Additionally, in many cases of human sex disorders, their source remains unknown, indicating that the research on the genes involved in gonadal development features a great distance to travel.