Effects of endocrine disruptors on reproductive health

Numerous studies describe a probable link between exposure to some of these endocrine disruptors and a certain number of pathologies, in particular fertility and reproductive disorders (reduced sperm quality, increased frequency of abnormalities in the development of reproductive organs or function, lowering of the age of puberty, testicular cancers). In parallel to the increase in the incidence of testicular germinal cancer, an increase in the incidence of cryptorchidism, hypospadias and male hypofertility has been observed. This led Niels Skakkebaek's team to formulate the hypothesis of **testicular dysgenesis syndrome** (TDS), a syndrome associating these four abnormalities of the reproductive system in men [1] and for which exposure to endocrine disruptors is suspected. Various *in vitro* experiments conducted in rodents have made it possible to characterize certain effects and mechanisms of action of endocrine disruptors on male reproductive function [2]. Stronger associations have been shown with exposures during specific windows of susceptibility, when organs are more sensitive to hormonal effects, with more tangible results for effect biomarkers compared to direct disease analysis as an endpoint. Transplacental passage allows for toxic effects during embryonic development and can disrupt fetal development of male reproductive organs. These exposures may be the fetal basis for the impairment of adult infertility.

The mirror hypothesis of ovarian dysgenesis (endometriosis, precocious puberty, polycystic ovaries, uterine fibroid) was then proposed for women [3].

Notes and references

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