Postnatal exposure to Diethylstilbestrol (DES) as treatment for breast engorgement and risk of cancer among exposed Jewish women and the offspring that follows this exposure
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Diethylstilbestrol (DES) is a synthetic non-steroidal oestrogen that was used in the treatment and prevention of pregnancy-related complications between 1940 and the 1970s. Most women were exposed to this drug either during pregnancy or intra uterine life, however, it was also used in the postnatal period. The use of this drug for pregnancy related conditions was withdrawn following studies demonstrating, that not only the drug was ineffective in preventing these complications, but it was the cause for the rare malignancy, vaginal clear cell adenocarcinoma, in young daughters who were exposed in-utero.

Following these findings, a number of other studies of mothers and offspring have shown associations between DES exposure and risks of breast cancer, breast cancer mortality, and reproductive tract structural anomalies, among others.

In this study, we examine whether postnatal exposure to DES among Jewish women was associated with any risk of cancer among these women and their offspring that followed this exposure.

This is a secondary data analysis in the settings of the Jerusalem Perinatal Study (JPS), a population-based cohort, which was linked to the Israel Population Registry for vital statistics, and to the Israel Cancer Registry for cancer incidence. Mothers who gave birth in one of the three largest hospitals in west Jerusalem in 1974-76 were interviewed within two days postpartum regarding exposure to DES for breastfeeding cessation after the previous birth. Follow-up time was counted from date of index (interview) birth to date of cancer diagnosis, death, or January 1st 2008, which ever occurred first. Occurrence of cancer at any site, as well as cancers of the breast, colon, skin (melanoma), uterus and ovary was assessed for among mothers. Among the offspring, we considered cancer at any site. Cox proportional hazards models were used to estimate the hazard ratios and their 95% confidence intervals for the relationship between DES exposure and occurrence of cancer over thirty three years of follow up, controlling for potential confounders.

The study demonstrated a 74% significant risk of cancer at any site only after 27 years of follow up ,HR: 1.74, 95%CI=1.25-2.42, adjusted for attained age at birth of child, parity and contraceptive use. We also found an age-adjusted 2.13-fold increased risk for malignant melanoma, HR: 2.13, 95%CI=1.10-4.13. This relationship was marked among women of low parity however it did not reach statistical significance after adjusting for other potential confounders.
There was no evidence that DES exposure was associated with breast cancer, colorectal cancer or gynaecological cancers among mothers. No significant association was found between maternal exposure to DES and cancer at any site in the offspring.

In conclusion, postnatal DES exposure is associated with an increased risk of cancer at any site among mothers only after 27 years. Offspring whose mothers were exposed to DES in the previous postnatal period had a non-significant risk of cancer at any site, owing perhaps to the small sample size and to the young age at the end of follow-up period.

This is the first study of DES exposure in the JPS and the first study to consider postnatal exposure in Jewish women; there is a need for additional follow-up to assess if any new associations develop with time.