

## **UTERINE VOLUME IS DRAMATICALLY DECREASED AFTER CHILDHOOD HEMATOPOIETIC STEM CELL TRANSPLANTATION WHATEVER THE CONDITIONING REGIMEN. A CASE-CONTROL MRI STUDY IN A COHORT OF CHILDHOOD ACUTE LEUKEMIA SURVIVORS.**

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## Abstract Body

**Objective:** To study the impact of Hematopoietic Stem Cell Transplantation (HSCT) on uterine volume of childhood acute leukemia (CAL) survivors according to the type of the myeloablative conditioning (MAC) regimen.

**Materials and methods:** We conducted a prospective multicentric national study to assess the uterine volume by pelvic MRI in adult women treated for a CAL with HSCT. Every case was matched 1:1 to control women who underwent MRI for benign ovarian cysts. The main outcome measure was the uterine volume.

**Results:** We included 88 women in HSCT group. Mean age at HSCT was  $9.1 \pm 0.3$  years with a mean follow-up of  $16.4 \pm 0.5$  years. In HSCT group, two sub-groups of conditioning regimens have been compared to the control group ( $n = 88$ ): a chemotherapy-only MAC regimen group with high dose of alkylating agents ( $n=34$ ) and one TBI-based regimen group ( $n=54$ ). Uterine volume was significantly decreased both after chemotherapy-only regimen and after TBI, with respectively  $45.3 \pm 5.6$  and  $19.6 \pm 1.9$  mL Vs  $79.7 \pm 3.3$  mL in control ( $p < 0.0001$ ), corresponding to a reduced uterine volume of 43.1 % [28.8 – 57.4] after chemotherapy and 75.3 % [70.5 – 80.2] after TBI. After chemotherapy-only regimen, uterine volume was dramatically decreased in POI women without hormonal replacement treatment (HRT) compared to those having a correct hormonal balance ( $15.2 \pm 2.6$  Vs  $49.3 \pm 6$  mL,  $p < 0.05$ ). In contrast, after TBI, uterine volume was similar in all women, with no positive effect of an estrogenic impregnation on uterine volume (respectively  $16.3 \pm 2.6$  Vs  $20.1 \pm 2.2$  mL).

**Conclusion:** After HSCT, high-dose chemotherapy-based regimens containing alkylating agents induced a decreased uterine volume. The impact of chemotherapy on myometrium and uterus needs to be further investigated for better counselling HSCT survivor women who want to conceive.