The anti-Müllerian hormone (AMH) in females is currently used as a marker of ovarian reserve. Changes on AMH levels after repetitive controlled ovarian hyperstimulation (COH) and oocyte harvesting Assisted Reproductive (ART) cycles is a subject of controversy. Even though in the short term, ART procedures may not affect further ovarian response and oocyte yield in young females, it is not known if repetitive procedures result in accelerated ovarian aging in the long term.

Objective: To determine changes in AMH levels following ovarian stimulation and oocyte retrieval.

Design: Retrospective cohort.

Materials and methods: This analysis was carried out in 95 patients (age range 30 to 47) measuring AMH levels. 30 of them had previous ART (study group: GA) and 65 had no previous ART (control group: GB). For analysis, patients were divided according to age in <= 39 years group (50 patients) and >= 40 years group (45 patients). Additionally, we analyzed the data in GA in relation to the number of ART cycles that the patients underwent.

Results: No statistical differences were observed when comparing GA vs GB in the <= 39 years (0.71ng/ml and 0.75ng/ml). However, in >= 40 year, AMH levels were higher in patients of GB vs GA (0.57ng/ml vs 1.20ng/ml, p= 0.05). Furthermore, patients <= 39 years in GA tend to show lower AMH levels with two or more previous ART cycles (NS).

Conclusion: These results show that AMH levels diminish drastically in patients above 40 years that underwent TRA. These results were not observed in patients <= 39 years old.

Comment: These results could add to our knowledge of the dynamics of ovarian follicular aging and reserve, as well as indicate a red alert for a possible acceleration of ovarian aging after repeated ovarian stimulations and oocyte retrievals in women 40 years and older.