P87. Age at menarche in the prediction of clinical pregnancy and live birth outcomes following Assisted Reproduction Technologies

C Siristatidis (GR) [1], P Vogiatzi (GR) [2], E Pouliakis (GR) [3], G Salamalekis (GR) [4], T Vrantza (GR) [5], E Alexiou (GR) [6]

Context: A landmark event in female fertility is the menarche. By exploring the relevant timepoints compared to the clinical outcomes could allow us a clearer distinction between biological versus chronological aging of the ovary and uterus towards signifying reproductive potential in the personalized management of subfertility.

Objective: To evaluate a possible relationship and the predictive power of age at menarche with clinical outcomes in an IVF setting.

Methods: A retrospective analysis performed in the Assisted Reproduction Unit of Attikon University Hospital (2010–2017). Data for age at menarche with accuracy up to 0.5 years was available with follow-up data on clinical outcomes. The statistical analysis was performed via SAS 9.4 for Windows while threshold determination via software implemented in Matlab for Windows.

Patients: 255 subfertile women undergoing 430 IVF cycles were included (mean age=35.8±4.2).

Intervention: Age at menarche as a single prognostic factor for the prediction of the ART outcome by calculating the sensitivity, specificity, PPV, NPV, and OA of various thresholds.

Main Outcome Measures: Clinical pregnancy as confirmed by ultrasonography of at least one embryonic sac and fetus with a discernible heartbeat. Live birth as the expulsion or extraction of an offspring with evidence of life (breathing, heartbeat, umbilical cord pulsation or definite movement).

Results: The analysis presented here demonstrates that 131 cases had confirmed clinical pregnancy (age:34.9±4.0, vs. no clinical pregnancy 36.2±4.2,p<0.05) and 92 cases proceeded to live birth (age:34.6±4.0 vs. 36.1±4.2,p<0.05). The menarche age was 13.0±2.1 vs 12.3±1.7(p<0.05) for clinical pregnancy and 13.2±2.0 vs. 12.3±1.7(p<0.05) for live birth. Concerning prediction by age at menarche we found that using as threshold of 13years the following were obtained: Sensitivity=57.25% specificity=57.53% PPV=37.13% NPV=75.44% OverallAccuracy=57.44% with OddsRatio=1.81, while 13years as a predictor for live birth indicated: Sensitivity=64.13% specificity=57.69% PPV=29.21% NPV=85.53% OverallAccuracy=59.07% and OddsRatio=2.44.

Conclusions: Age at menarche seems to have a merit in the prediction of ART outcome in terms of clinical pregnancy as well as for live birth. Women with early menarche have fewer chances for positive clinical outcomes, especially the age of 13 seems to be a cut-off point whereas sensitivity is reduced dramatically.

[1] National and Kapodistrian University of Athens, Athens, [2] National and Kapodistrian University of Athens, Athens, [3] National and Kapodistrian University of Athens, Athens, [4] National and Kapodistrian University of Athens, Athens, [5] National and Kapodistrian University

of Athens, Athens, [6] National and Kapodistrian University of Athens, Athens