It is known that high levels of TSH are associated with higher miscarriage risk, though the precise TSH cut-offs are debated.

**Aim**

To evaluate if pre-conceptional TSH levels associate with increased risk of early miscarriage in a large series of infertile women submitted to in vitro fertilization (IVF) and to determine the threshold of TSH associated with the highest prevalence of pregnancy loss.

**Patients**

2099 infertile women with available TSH (mean± age 36.7±4.1 years, mean± SD BMI 22.7±4)

- Intrauterine insemination (IUI) N=571
- In vitro fertilization (IVF) N=1526

**Methods**

We enrolled women submitted to IVF who underwent TSH measurement within the previous 6 months. The following parameters were recorded: age, BMI, causes of infertility, smoke, drugs, ovarian stimulation protocol, basal estrogen, estrogen after stimulation, number of retrieved oocytes, number of secondary degree (MII) oocytes, number of transferred embryos, biochemical pregnancy, clinical pregnancy, miscarriage.

**Results**

- DELIVERY N=252 (59.2%)
- BIOCHEMICAL PREGNANCY N=425 (27.8%)
- MISCARRIAGE N=173 (40.7%)

**Conclusions**

In women undergoing IVF, lower TSH levels significantly associate with a reduced risk of early pregnancy loss. These data strongly indicate the need for TSH screening prior to IVF procedures. In contrast with the current clinical practice indicating 2.5 mU/L as the first trimester threshold associated with a higher risk of miscarriage, present data indicate that treatment with L-T4 should be recommended in all infertile women with preconceptional TSH levels >3 mU/L before starting ovarian stimulation for IVF procedure.