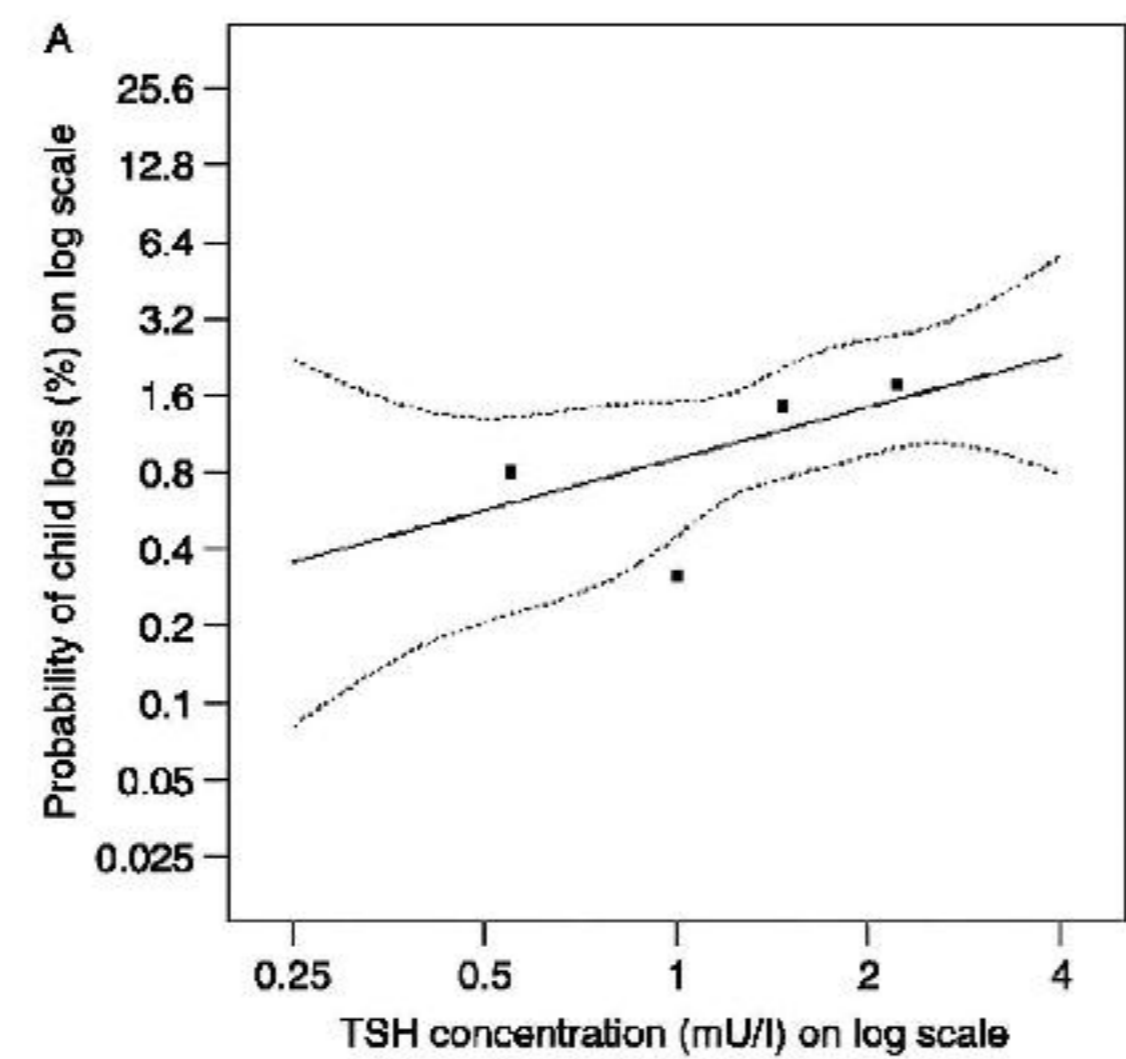


# PRECONCEPTIONAL TSH AND MISCARRIAGE IN INFERTILE WOMEN SUBMITTED TO IN VITRO FERTILIZATION

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



## Recommendations

If TSH trimester-specific reference ranges are not available in a given laboratory, the following reference range upper limits are recommended: **first trimester, 2.5 mU/L; second trimester, 3.0 mU/L; third trimester, 3.5 mU/L.**

Lazarus et al, European Guidelines 2014



## Aim

To evaluate if pre-conceptual 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.

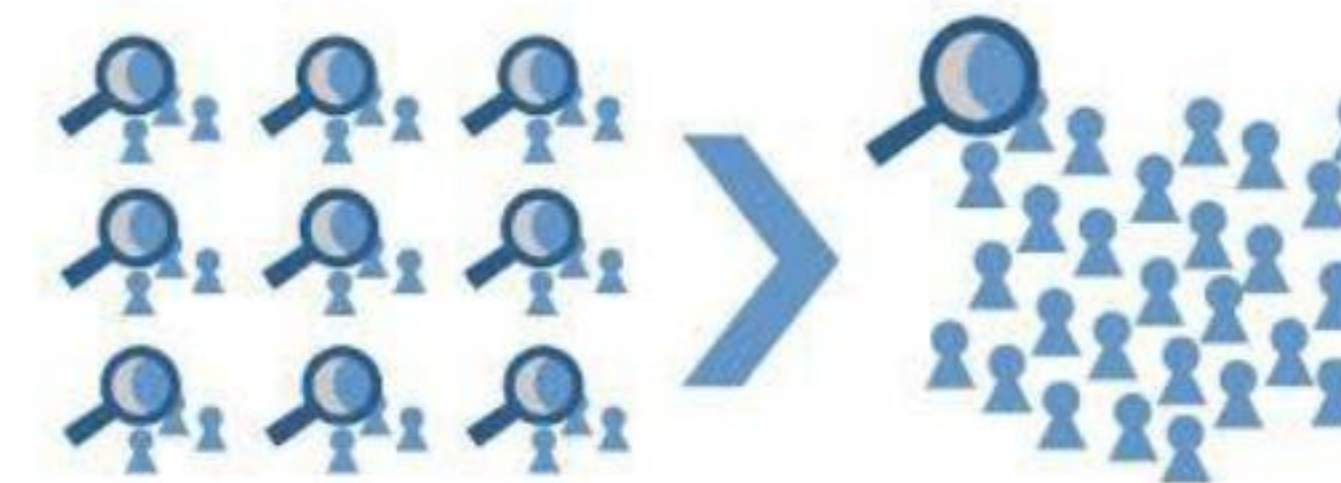
## Patients



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 second degree (MII) oocytes, number of transferred embryos, **biochemical pregnancy, clinical pregnancy, miscarriage.**

## Results

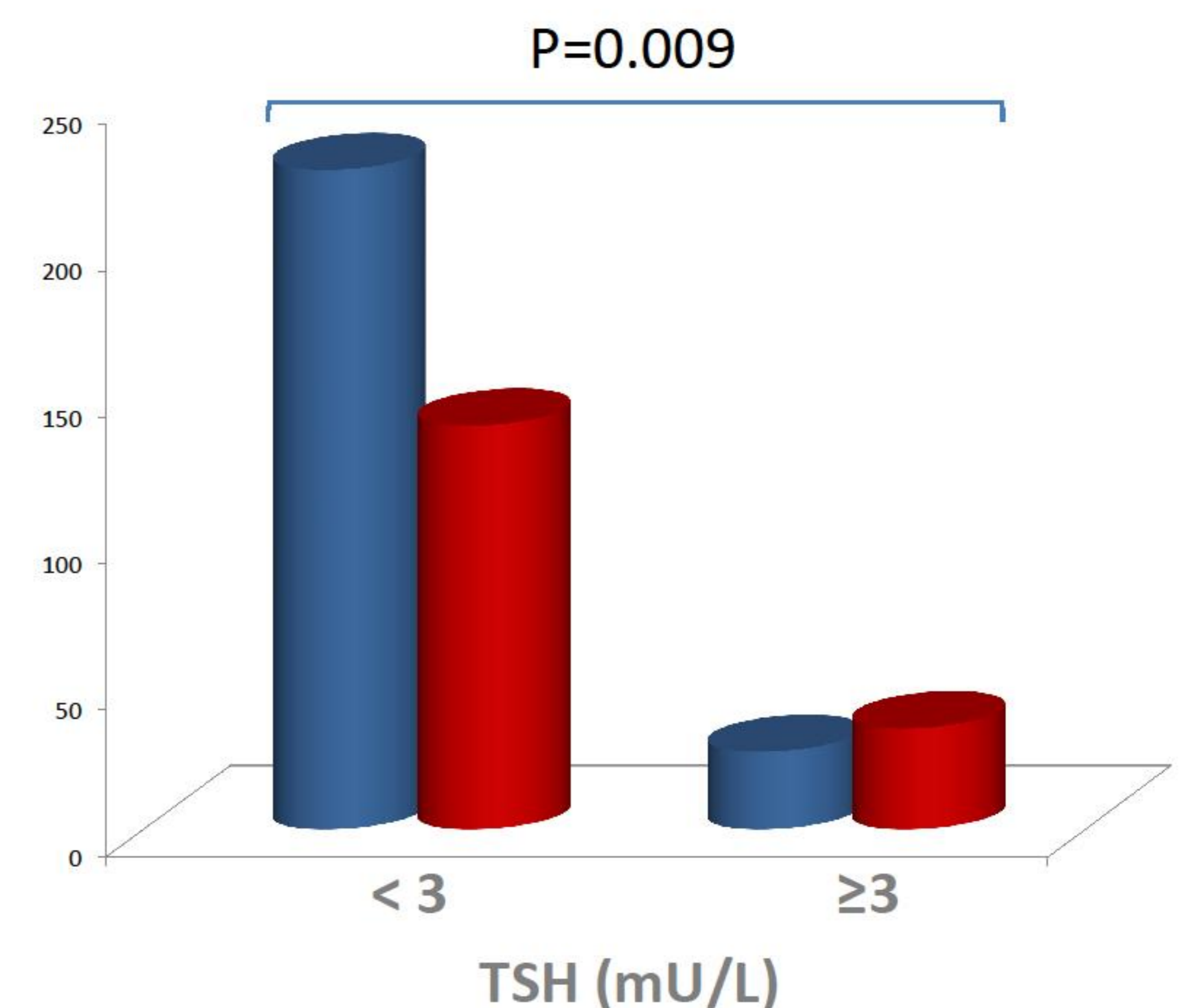
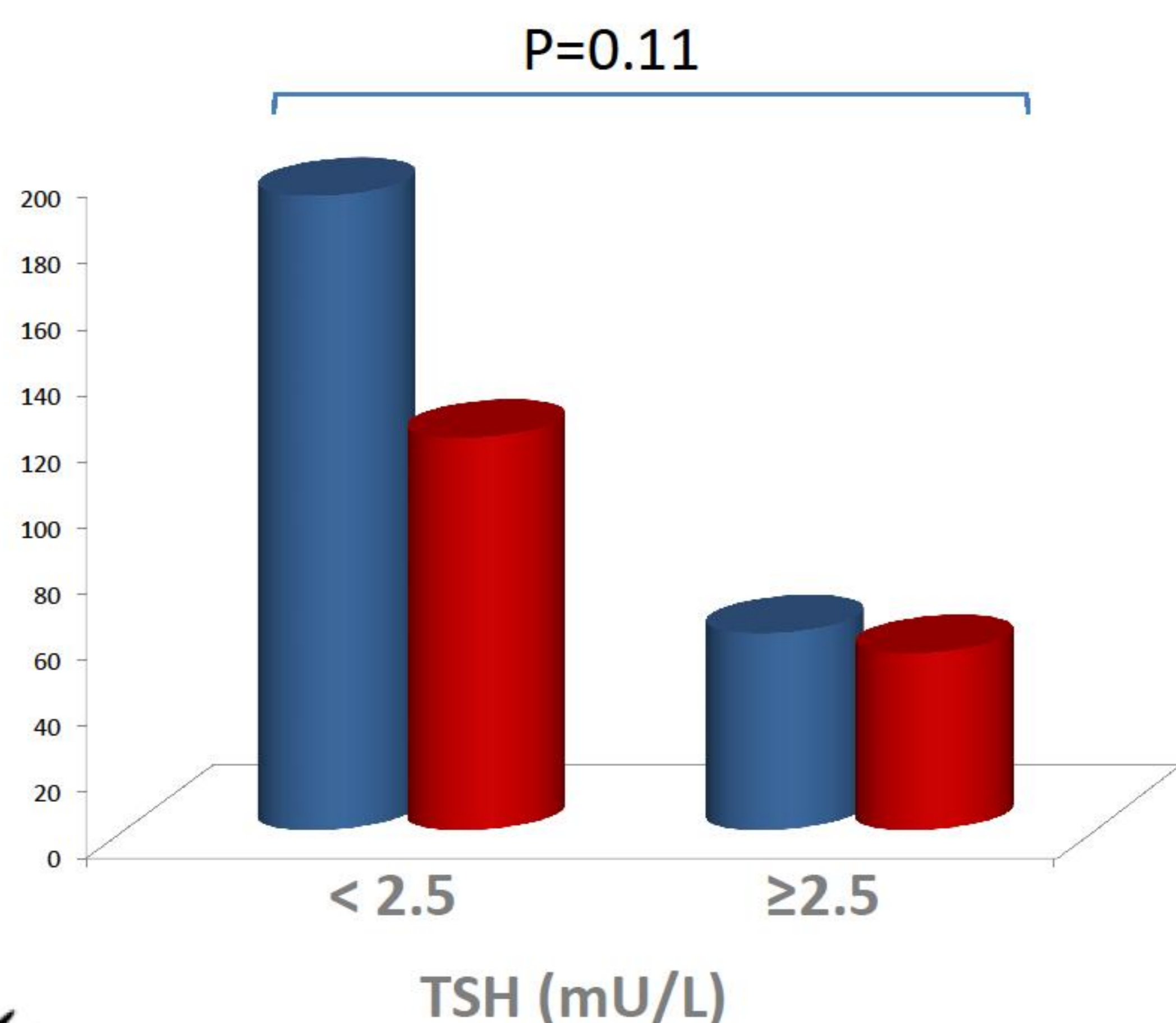
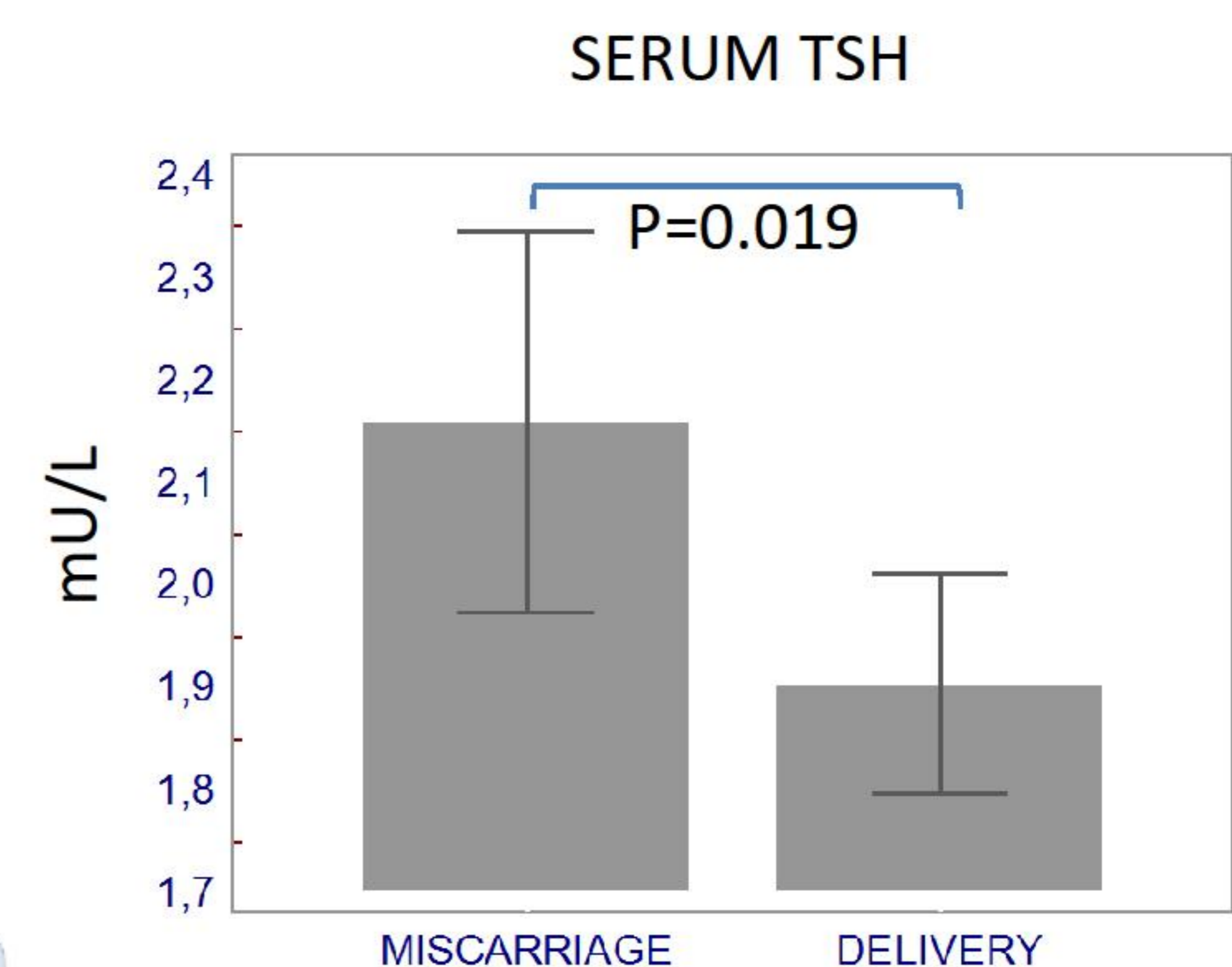
IVF  
N=1526

BIOCHEMICAL PREGNANCY  
N=425 (27.8%)

DELIVERY N=252  
(59.2%)

MISCARRIAGE  
N=173 (40.7%)

### SERUM TSH CUT-OFFS



## 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.

