Objective. Evaluate the endometrium of infertile women exposed to stimulation cycles express integrin \( \beta 3 \) and its correlation with Mullerian inhibition substance (MIS) serum concentration.

Methods. We study 13 patients with implantation failure and determine MIS serum concentrations, also endometrium biopsy was performed in a Mock cycle at the implantation window (day 17). Integrin \( \beta 3 \) expression evaluated by immunohistochemistry. An index that results from the addition of the MIS concentration and the integrin percentage was developed as a marker to determine endometrial functionality.

Statistical Analysis. Rho-Spearman and Pearson-correlation were used to evaluate statistical significance (p < 0.05).

Results. Percentage of endometrial gland cell expressing integrin \( \beta 3 \) showed a wide variation that ranged from < 1% to 70% correlated to MIS. The number of patients that got pregnant was 3. One of them had low MIS values and low integrin \( \beta 3 \) expression but achieved pregnancy through egg donor; the remaining two patients had a high MIS value and low percentage of cell expressing integrin. When the above-mentioned results were evaluated as an index, that excludes the entire male factor, we observed that the patients that managed to get pregnant had a value below 20, and the differences between values amongst pregnant and non-pregnant women were statistically significant (p< 0.001).

Conclusion. Expression of peripheral blood MIS, and measurement of integrin mean that the patients who achieve pregnancy and had a lower MIS/integrin index suggest that the implantation process requires on top of a "healthy" endometrium an as yet unknown immunological an biochemical control mechanism, possibly regulated through TGF and the MAPK and ERK pathways.