Luteal phase is important as it is during this period of time that embryonic implantation takes place. Currently, in the majority of the protocols used in assisted reproduction a defective luteal phase has been described. The aim of the present work was to investigate luteal phase endocrinology and regulation in different stimulation protocols in comparison to natural cycles. The comparison of donor unsupplemented IVF cycles stimulated with recFSH/Ganirelix 0.25 showed a significantly shorter luteal phase length and significantly higher steroid concentrations in the stimulated cycles. However, luteal phase defects might not be attributed to GnRH antagonist administration as luteal LH levels were similarly reduced in cycles stimulated with HMG as well as HMG/Cetrorelix 0.25. These differences might not be attributed to ovulatory HCG injection as there was no difference in luteal LH values in natural cycles with no intervention, compared to natural cycles with ovulatory HCG injection. High steroid concentrations observed in stimulated cycles due to multi-follicular development might reduce LH levels. LH values were significantly reduced in the luteal phase in natural cycles after IM progesterone administration in the luteal phase than in natural cycles with no intervention. These high steroid levels might also affect endometrial receptivity. In stimulated cycles endometrium was advanced in the early luteal phase compared to the corresponding day in natural cycles. However, clomiphene citrate treatment has a versatile role as, LH levels remained high in the follicular and in the luteal phase. This might affect the dose of the antagonist needed to prevent the LH surge as there was a great proportion of premature LH surges with Cetrorelix 0.25. In addition, it may also question the need of luteal phase supplementation in these cycles.

Curriculum Vitae

Mina Tavaniotou was born in the city of Kavala, Greece. She graduated from the Medical School of the University of Ioannina in 1990. In 1997 she completed her specialization in Obstetrics and Gynaecology in the University of Thessaloniki in Greece. Then she worked in Princess Alexandra Hospital and in Kings’ College Hospital in London. In 1998 she started her Masters’ in Medical and Pharmaceutical Research at the Vrije Universiteit Brussel focused on the endocrinology of the luteal phase in ovarian stimulation and on endometrial receptivity. She completed her thesis entitled “Correlation between endometrial morphology, endocrinology and integrin expression in the early luteal phase in natural and stimulated cycles” in 2000 (Promoter Prof. Paul Devroey, Supervisors Johan Smitz and Claire Bourgain). Since 2000 she continued the research project as a PhD student in the ‘Doctoraat Medische Wetenschappen’ (PhD in Medical Sciences) investigating the endocrinology and regulation of the luteal phase in stimulated cycles in different stimulation protocols (promoter Prof. Paul Devroey). She has published nine articles in peer-reviewed journals, the eight as first author and four chapters in books, the three as a first author. She is currently working in Thessaloniki as a medical doctor in the infertility centre “Embryogenesis” and is also affiliated with the University of Thessaloniki.