Luteal phase deficiency (LPD) was first described, as a primary cause of infertility, by Georgeanna Seegar Jones in the 1940s, while working at the Johns Hopkins Hospital and University in Baltimore (Maryland), well before achieving, together with her husband, Howard W. Jones, the first US baby born after in vitro fertilisation (IVF) in Norfolk (Virginia), in 1979. Later studies have shown that the techniques used for ovarian stimulation and oocyte recovery for IVF can aggravate the risk of LPD. This is particularly the case of the ovarian stimulation protocols using gonadotropin-releasing hormone (GnRH) antagonist to prevent premature ovulation, followed by ovulation triggering with a GnRH agonist. These protocols can efficiently prevent the development of severe ovarian hyperstimulation syndrome (OHSS) in women at risk. On the other hand, the GnRH antagonist-controlled and GnRH agonist-induced cycles result in a significant impairment of the corpus luteum (CL) function, resulting in LPD with subsequent embryo implantation failure or early pregnancy loss. However, recent data have shown that some women are particularly prone to the development of LPD, with any type of the ovarian stimulation protocol used, and even in natural ovulatory cycles. Consequently, the serum progesterone concentrations should be controlled repeatedly, beginning with the day of embryo transfer, and then every week, even before knowing if pregnancy has occurred. This is particularly important in oocyte donation treatment cycles where CL is usually absent, unless the treatment is performed in a natural cycle. If CL is present, its function can be improved by daily administration of GnRH agonist during 2 weeks after fertilisation. If not (most of cycles with the transfer of the patient’s own frozen embryos and fresh or frozen embryos resulting from oocyte donation), LPD has to be corrected by individual dosing of progesterone, applied by vaginal, oral, transdermal, intramuscular or subcutaneous routes. In patients with unexplained infertility, luteal phase serum progesterone concentrations should be determined and corrected by external progesterone administration, if necessary, thus avoiding therecourseto IVF in many cases.

Biography
Jan Tesarik graduated in Medicine and Surgery from Prague University (in Czech Republic). He earned his medicine and surgery doctorate from Prague University. He specialized in reproduction medicine from Prague University. He is scientific advisory in Eylau Laboratory, in Paris (France).

Publications
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2. After corona: there is life after the pandemic, Reproductive biomedicine online 40(6), DOI: 10.1016/j.rbmo.2020.04.002

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