Authors' Reply

Do Basal Luteinizing Hormone and Luteinizing Hormone/Follicle-Stimulating Hormone Ratio have Significance in Prognosticating the Outcome of *In vitro* Fertilization Cycles in Polycystic Ovary Syndrome?

Dear Editor,

We thank our readers for their valuable inputs regarding our article "Do basal luteinizing hormone and luteinizing hormone/follicle-stimulating hormone (LH/FSH) ratio have significance in prognosticating the outcome of *in vitro* fertilization (IVF) cycles in polycystic ovary syndrome?"

We concluded in our study that "The elevated basal day 2/3 LH and LH/FSH ratio do not impair the outcome of GnRH antagonist protocol treated IVF/intracytoplasmic sperm injection (ICSI) cycles in polycystic ovary syndrome (PCOS) women."[1]

The reader has suggested two confounding factors that might affect day 2/3 LH and LH/FSH ratio results. First, certain genetic polymorphisms can have effect. They cited a report by Deswal *et al*., in which luteinizing hormone and LH receptor (LHR) gene polymorphisms played an important role in determining LH and LH/FSH ratio.[2] The strong association of LHβ and LHR variations with high LH/FSH ratio was observed by them in their study along with the elevated levels of LH and LH/FSH ratio in majority of PCOS patients. In the present study, although we did not look for genetic polymorphisms in our patients which might be one of the causes for elevated levels, whatever may be the cause, the elevated levels did not impair the outcome of IVF/ICSI cycles in PCOS women.

Second, Segal *et al*. reported in a case study of misdiagnosis of central precocious puberty that heterophile antibodies (HAs) may cause assay interference that can result in aberrant LH and LH/FSH ratio.[3] However, they concluded that the presence of HAs should be considered when the clinical picture is incongruent with the laboratory data. The present study was conducted on the PCOS patients undergoing IVF/ICSI cycles. PCOS was defined in the study according to the Rotterdam criteria and in none of the patients, laboratory data was found contrasting to clinical data. Segal *et al*. also mentioned in their case study that HAs are able to cause interference in any assay system that relies upon antibody for analyte recognition. It was also documented that even though HAs appear to be common, their ability to cause clinically significant interference is variable and depends upon the antibody concentrations, relative binding affinities, the type of assay being performed, and the assay protocol. In the present study, all the patients had LH testing from the same laboratory using chemiluminescent assay which probably reduced any error due to assay interference.

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Received: 19-07-2021 **Accepted:** 08-08-2021
Published: 28-09-2021

Access this article online

Quick Response Code:

Website: www.jhrsonline.org

DOI: 10.4103/jhrs.jhrs_105_21

How to cite this article: Neeta S, Neha M, Yogita D. Do basal luteinizing hormone and luteinizing hormone/follicle-stimulating hormone ratio have significance in prognosticating the outcome of *In vitro* fertilization cycles in polycystic ovary syndrome? J Hum Reprod Sci 2021;14:326.