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Application of Genomic Information in the Treatment of Infertility

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According to WHO estimates, 15% of reproductive-aged couples worldwide are affected by infertility (WHO, 2020), showing an upward trend for the past 30 years. Key Facts:

- About 9% of men and about 11% of women of reproductive age have experienced fertility problems.¹
- In one-third of infertile couples, the problem is with the man.
- In one-third of infertile couples, the problem cannot be identified or is with both the man and woman.
- In one-third of infertile couples, the problem is with the woman.

In Malaysia, the national fertility rate has declined dramatically, and in 2012, according to the Department of Statistics, it has fallen below the replacement level. Although infertility treatment using Assisted Reproductive Technologies has shown tremendous success rates, the incidence of low conceiving rates still outpaces technological and scientific advances. In order to reverse the trend, genomic information is being used to assess the treatment response level and to develop more precise and augmented therapies. The molecular geneticist is becoming an essential team member in infertility clinics.

There are several areas in which DNA analysis of both parents can contribute to better outcomes of the treatments, including fertility pharmacogenetics, identifying the causes of hormonal imbalance, and discovering underlying genetic conditions that interfere with ovarian reserves, semen quality, and implantation failures.

Therefore, it is crucial to understand how genomic information can assist clinicians and familiarise genetic results with interpretation within the patient’s medical context.

Biography

Pawel Suwinski is an Assistant Professor of Food Science and Engineering at Shahid Chamran University (SCU) of Ahvaz. She received her PhD in Food Engineering in the field of “Food Chemistry & Nanotechnology.