RECURRENT IMPLANTATION FAILURE

Repeated Implantation Failure, Rif

Failure of implantation in at least three consecutive IVF attempts.

♀ Symptom ♂ Female

About Recurrent implantation failure

Recurrent implantation failure has been defined as the absence of implantation after three or more transfers of high quality embryos or after placement of 10 or more embryos in multiple transfers.

The causes of implantation failure are diverse and especially due to different maternal factors as uterine abnormalities, hormonal or metabolic disorders, infections, immunological factors, thrombophilias as well as other less common ones.

One of the main causes of failure of implantation after proper embryo transfer is intrauterine pathology. Intrauterine pathology was diagnosed in about 23% of 2500 cases prior to IVF trial. Tubal pathology, particularly hydrosalpinx (a distally blocked fallopian tube filled with serous or clear fluid), is associated with a low embryo implantation rate in IVF as well as an increased risk for early pregnancy loss.

If a failure occurs implantation embryos, this also may be due to genetic switching in relation to endometrial receptivity. There are specific genes (such as Interleukin 11 or calbindin-D9k) that are responsible for embryo implantation. If, they do not work when it is assumed that the embryo implant leads to abortion.

Also it is essential to note the influence of severe male factor (such as sperm defects) and its impact on genetic and morphological state of the embryo.

Endometrial injury may have a beneficial role in implantation and improve the pregnancy rate. However, there are still many unanswered question including patients selection, timing, technique and number of endometrial biopsies needed.

A site-specific hysteroscopic biopsy-induced injury of the endometrium during the controlled ovarian hyperstimulation cycle has been shown to improve subsequent embryo implantation in patients with repeated implantation failure. The procedure starts with performing panoramic hysteroscopy.

Thyroid disorders

A thyroid disease is a medical condition impairing the function of the thyroid. Thyroid autoimmunity (TAI), which is defined as the presence of thyroid disorders (such as autoantibodies against thyroid peroxidase (TPO) and/or thyroglobulin (TG)), is related to repeated implantation failure (RIF).

TAI induces thyroid dysfunction, which leads to adverse pregnancy outcomes, anti-thyroid antibodies directly target human chorionic gonadotropin receptors and some placental antigens to affect implantation. TAI serves as not only the necessarily pathogenic antibodies but also as a marker for immune abnormality, which affects reproductive outcomes. Therefore, the evaluation of immune status in women becomes very important. It has been reported that TAI is associated with impaired cellular immune responses in women with reproductive failures.
Find more about related issues

**Organs**

**Uterus**
The uterus is the largest and major organ of the female reproductive tract that is the site of fetal growth and is hormonally responsive.
Learn more at: [www.fertilitypedia.org/edu/organs/uterus](http://www.fertilitypedia.org/edu/organs/uterus)

**Diagnoses**

**Thyroid disorders**
A medical condition impairing the function of the thyroid.
Learn more at: [www.fertilitypedia.org/therapy/diag/thyroid-disorders](http://www.fertilitypedia.org/therapy/diag/thyroid-disorders)

**Repeated implantation failure**
The absence of implantation after three or more transfers of high quality embryos or after placement of 10 or more embryos in multiple transfers.
Learn more at: [www.fertilitypedia.org/therapy/diag/repeated-implantation-failure](http://www.fertilitypedia.org/therapy/diag/repeated-implantation-failure)

**Sources**

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"An endometrial gene expression signature accurately predicts recurrent implantation failure after IVF" — by Koot et al., licensed under [CC BY 4.0](https://creativecommons.org/licenses/by/4.0)

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