

In vivo conceptions after failed *in vitro* fertilization – experience with Natural Procreative Technology.

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Introduction:

Infertility affects approximately 10-15% couples in reproductive age. Due to lifestyle changes and delayed childbearing we may expect continuous increase in the number of patients with impaired fertility potential. The use of advanced technologies dedicated to infertile couples also increases steadily therefore ART are presented as a preferable method for the treatment of infertility [Sunderam 2014]. Due to controversy surrounding this method and patients beliefs, many couples seek alternative methods of initial treatment or after failed attempt to ART [Dutney 2007]. Treatment based on the principles of Natural Procreative Technology (NPT) seems to be an interesting option for those couples.

Objective:

To assess the role of NPT in the treatment of infertile couples who had at least one failed attempt to IVF in the past.

Material and methods:

This study is a retrospective analysis of medical records of forty couples who underwent treatment in Maternity and Life Clinic in Lublin (Poland) in years 2010-2014. The relevant data were abstracted from medical records and entered into a computerized database, with manual verification. Obtained data were analyzed statistically (Statistica StatSoft). Review of English language literature about ART and NPT was conducted. The retrospective study has an approval of Local Ethics Committee.

Results:

Forty couples were enrolled in the study. The mean female age was 34,7 years. The couples had been trying to conceive for an average of 5,2 years and had previously at least one failed attempt at ART. All couples decided to undergo treatment according to the principles of NPT.

During first month of the treatment all women had blood tests for the assessment of the level of follicle stimulating hormone, lutropin, progesterone (PG), oestradiol (OE), prolactin (also after stimulation with metoclopramide), testosterone, vitamin D, thyroxin and free thyroid hormones and specific antibodies. Additionally test for food intolerance and an oral glucose tolerance test with the assessment of insulin levels were done.

All couples learned how to monitor their biological markers of fertility using the Creighton Model Fertility Care System (CrMS) to identify, in particular, the 'peak-day' (the day preceding ovulation with the best quality of mucus). Each month, serum levels of oestradiol and progesterone were assessed seven days after the 'peak day' (mid-luteal phase). Also, ultrasound follicle tracking was performed at least once to confirm follicle rupture and assess the diameter of follicle and thickness of endometrium.

After initial diagnostic process following diagnoses were made: latent hyperprolactinemia in 29 cases, Hashimoto disease (autoimmune thyroiditis) in 12 cases, polycystic ovary syndrome (PCOS) with insulin resistance in 9 cases, male factor in 11 couples, low vitamin D level in 5 cases, luteal phase disorders (luteinized unruptured follicle) in 7 cases, suspicion of endometriosis (pelvic pain, dyspareunia, tenderness during examination) in 11 cases.

Women with diagnosis of hyperprolactinemia were treated with bromocriptine or cabergoline. Patients with Hashimoto disease received low dose of thyroid hormone, women with insulin resistance received metformin. Men with abnormal sperm analysis were consulted by urologist and supplemented with vitamins and microelements (especially folic acid, zinc, selenium, l-carnitine, alpha lipoic acid). Men with oligospermia received hormonal treatment for 3 months. Cases with low sperm mobility were treated additionally with low dose of lisinopril. Patients with low level of vitamin D received 4000 IU of this vitamin daily. In cases of low progesterone level on the 7th day after the 'peak day' patients received luteal phase support (oral or vaginal progesterone). Couples with low quality of mucus received mucus enhancers. Women with food intolerance were consulted by dietician and received special diet.

In 23 cases induction of ovulation was necessary. For this purpose we used aromatase inhibitor letrozole (LTZ), which is a very effective in induction of ovulation especially in patients with PCOS after failed stimulation with clomiphene citrate. LTZ was given always on 3rd day of the cycle in doses ranges from 7,5 to 20mg. Rupture of follicle was stimulated additionally by gonadotropin injection (HCG 5 000-10 000 IU).

There were 11 conceptions (27,5%) after described treatment. The median time from beginning of NPT treatment to conception was 6,9 months. 9 couples had full term live birth, 2 had miscarriages.

Discussion:

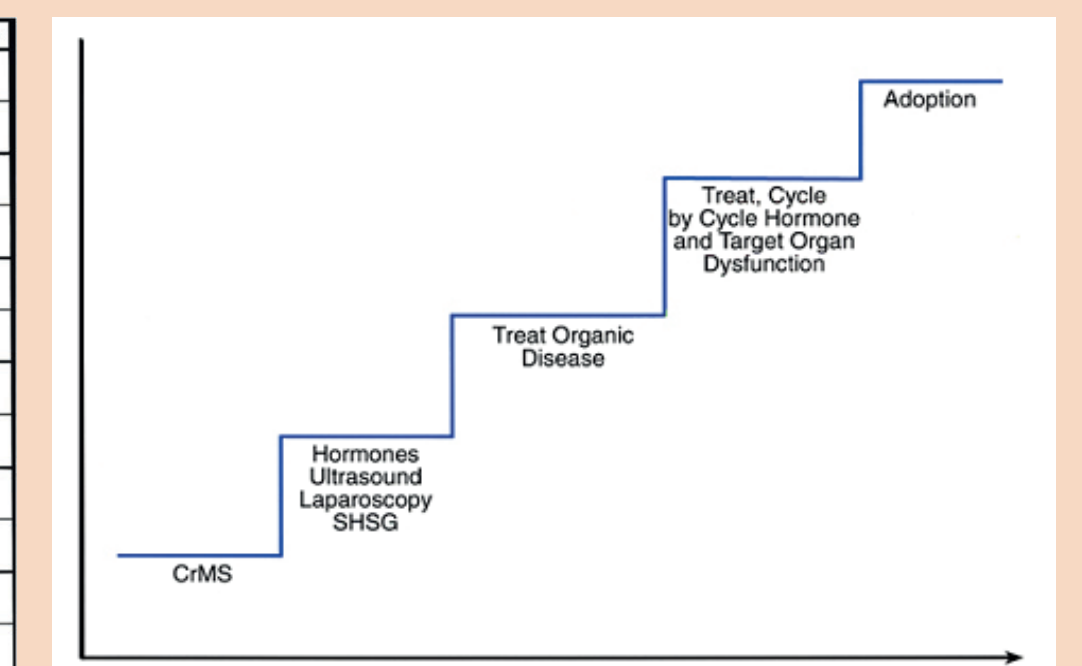
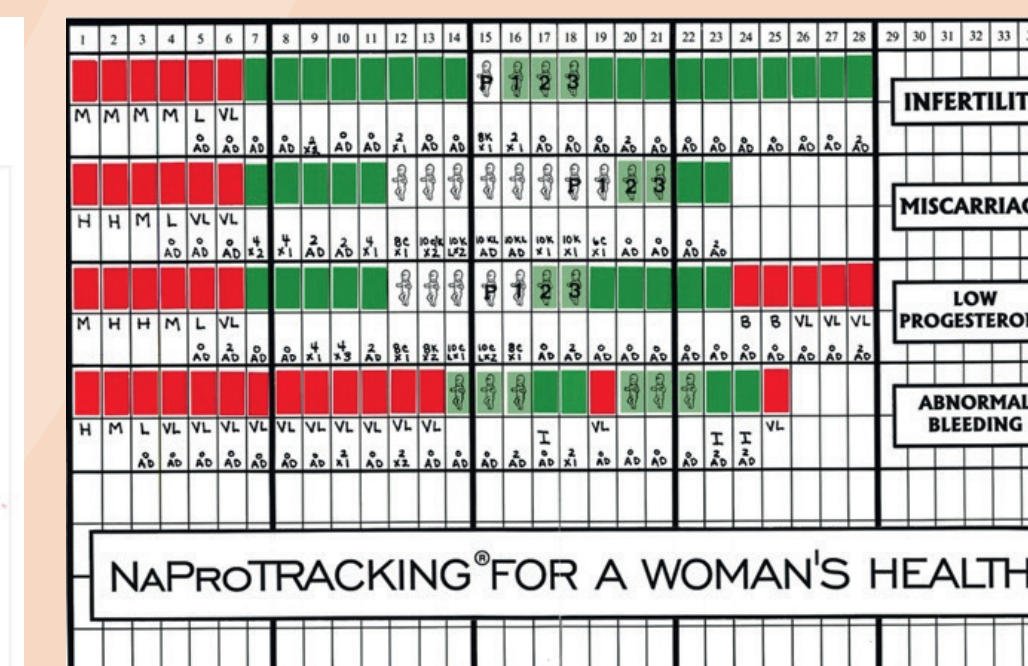
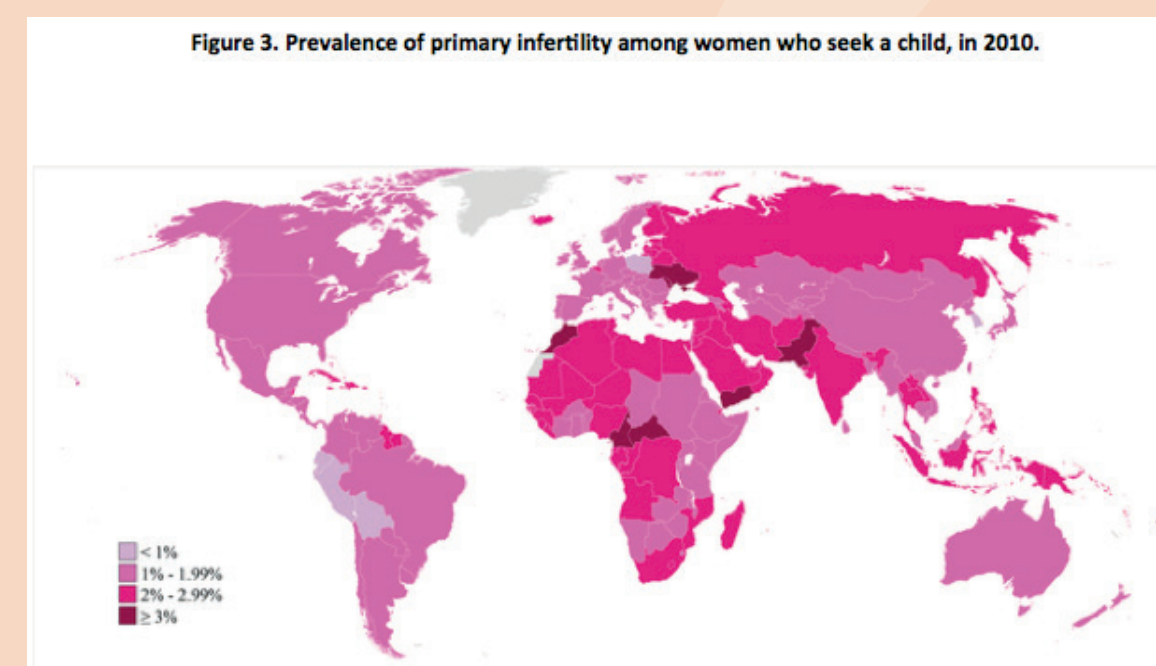
Infertility is a significant medical problem that affects many couples but the statistics about infertility rates could be misleading. Many studies say that infertility affects approximately 10-15% couples in reproductive age. Approximately 12% women between 15 to 44 years of age were evaluated or treated due to problems with infertility. The number of infertile patients seeking treatment is increasing due to lifestyle changes, and in particular due to delaying pregnancy. Advanced age of a mother is an important factor, which reduces fertility potential of a couple and declines when women reach their late 30s [Kessler 2013]. But according to the CDC (Center for Disease Control) in a survey performed in 2010 and recently published: "Percent of women aged 15-44 with an impaired ability to conceive is 10.9%. Percent of married women aged 15-44 that are infertile is 6.0%. The percent using medical help to conceive and having infertility issues has not changed much from 1982 until 2010. In fact, the incidence of infertility may have declined. The CDC states that 2.4 million women had problems with infertility in 1982, compared with 1.53 million in 2010"[Chandra 2013]. Looking at WHO study it shows even less: Global rates of infertility have remained relatively stable between 1990 and 2010, according to a study that compiled data from 277 national surveys in 190 countries. Research by the World Health Organisation (WHO) estimated that in 2010, 48.5 million couples worldwide were unable to have a child. They found that only 1.9 percent of women aged 20-44 who wanted a child were unable to have their first live birth and 10.5 percent of women who had previously been pregnant (resulting in birth, abortion or miscarriage) were unable to have another baby after five years of trying. This represented a 0.1 percent and 0.4 percent decrease from 1990, respectively [Mascarenhas 2012].

Originally, IVF was designed for women with bilateral tubal obstruction. After introduction of intracytoplasmic sperm injection (ICSI) the indication to IVF expanded to couples with male factor infertility and, at present, to patients with idiopathic infertility [Majumdar 2014]. In the recent times, the number of clinics providing assisted reproductive techniques and the use of advanced technologies dedicated to infertile couples has been increasing steadily and therefore ART are presented as a preferable method [Sunderam 2014]. Despite the development of ART, its efficacy and the risk associated with the procedure provoke controversies [Majumdar 2014]. Due to controversies surrounding this method and patients' beliefs, many couples seek alternative methods for initial treatment or after failed attempt to ART [Dutney 2007]. In our experience the treatment based on Natural Procreative Technology (NPT) is an effective tool for diagnosis and treatment of infertility. All couples presented in this study underwent treatment according to the principles of NPT enhanced by our experience and the latest medical research. NPT is a systemic and integrated approach to infertile couples developed by Thomas Hilgers and Pope Paul VI Institute (Omaha, US) which monitors and maintains women's reproductive and gynecological health. It provides medical and surgical treatment, which cooperates completely with the reproductive system [Stanford 2008]. "At the current stage of gynecology and reproductive medicine, the dominant treatment approach is either to offer oral contraceptives or in vitro fertilization. With IVF, the approach to infertility is to "skip over" the underlying or root causes. As a result, we have lost over 30 years of good research opportunities and when women go to the IVF clinics with underlying disease, they walk away from these clinics with the same disease. The difference between the two approaches is because in the IVF program they are not looking for the underlying causes and in the NaProTECHNOLOGY program they are. With NaProTECHNOLOGY, diseases are identified and treated, the foundation is laid for future success, more total pregnancies are achieved, the multiple pregnancy rate is much lower (3.2% versus 31.9%), the prematurity rate is also lower and there are no frozen embryos. In addition, fertility-focused intercourse is a part of NaProTECHNOLOGY but is not seen with IVF and the per woman pregnancy rate is higher. There are three things that IVF is associated with, and these include the speed to pregnancy itself is greater and the cycle-by-cycle pregnancy rate is greater. However, the overall per-woman pregnancy rate is higher with NaProTECHNOLOGY. In addition, IVF is built on a foundation of destroying life whereas NaProTECHNOLOGY is built on a foundation of nurturing life. NPT is also more cost effective because it is looking for the underlying causes and the root causes of the infertility problem" [Hilgers 2011]. In our opinion diagnostic process based on NPT allows us to limit the number of diagnosis of idiopathic infertility (in described group only in one case).

Women who undergo ART procedures are more likely to achieve multiple pregnancies, which carry the risk of complications, preterm delivery, and low births weigh infants [Sunderam 2014]. In our clinic in the group of 844 couples treated with NPT (unpublished data) we noticed only 3 twin pregnancies. In presented group we had only single pregnancies. CrMS is an excellent tool for the tracking of women cycle. Observations help us to detect even subtle changes that can have a crucial role in the conception. The information about the cycle is presented in the CrMS chart in a clear and validated style, which helps physician to make fast proper decision [Boyle 2011].

Conclusions:

NPT is an effective tool for the diagnosis and treatment of infertility which can be offered to infertile couples after failed IVF as an alternative method which can help to avoid repeat IVF procedures.



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