UNEXPLAINED INFERTILITY – SOLVING THE PUZZLE WITH NATUROPATHIC MEDICINE

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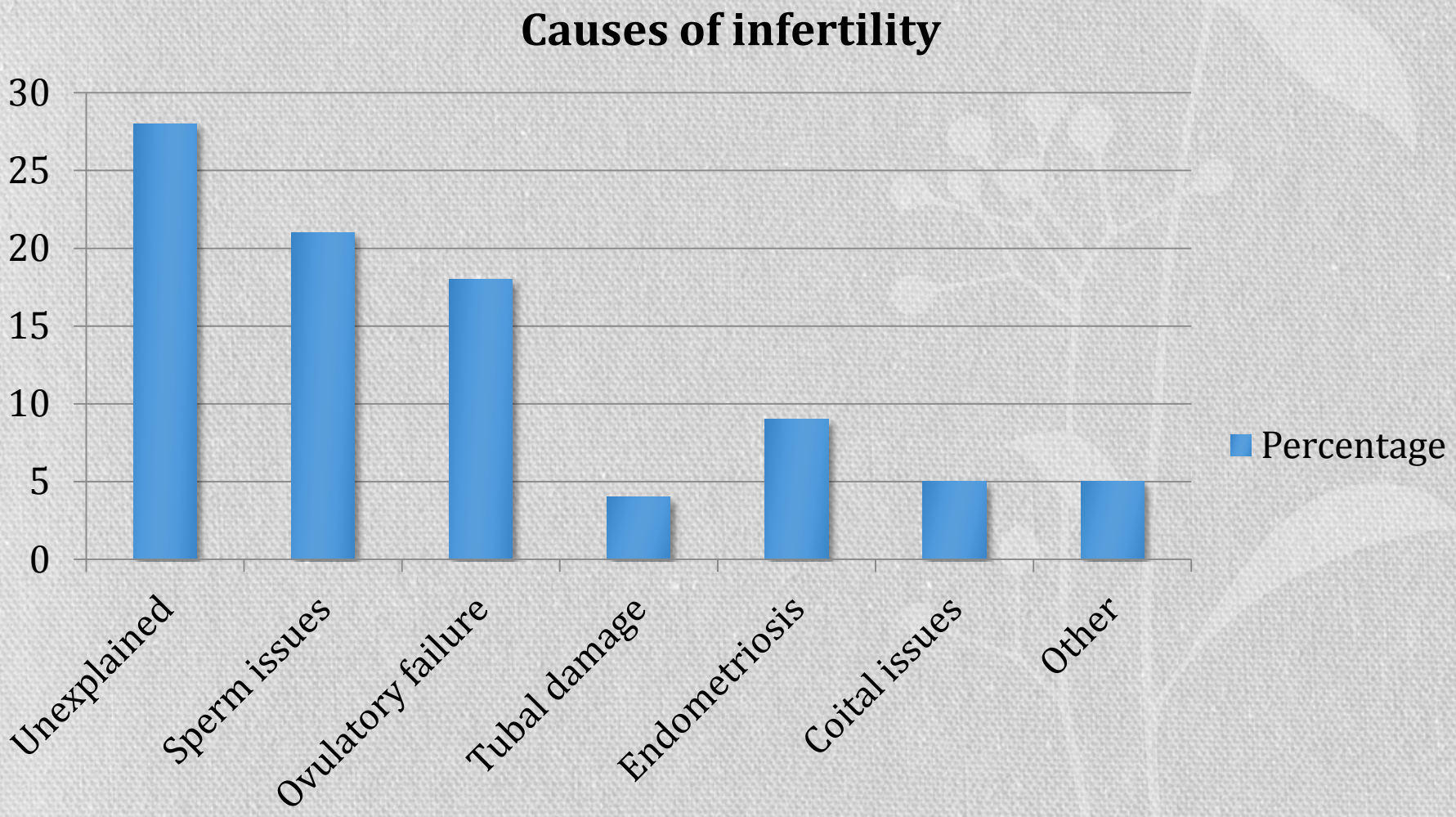
Unexplained infertility is a diagnosis given to approximately 30% of couples after a standard fertility work-up



UNEXPLAINED INFERTILITY =

NOT YET DIAGNOSED

Naturopathic approach:

1. A thorough health history, including family history.
2. Fill in any gaps with lab testing.
3. Get to the root of the problem, including stress, inflammation, nutrition, digestion, weight, etc.
4. There may not be a specific diagnosis, like low progesterone or elevated thyroid antibodies. Treat based on naturopathic principles.
5. Remember that a healthy body will conceive. Your job is to remove the obstacles.

Possible Diagnoses:

1. Endometriosis
2. Egg quality
3. Luteal phase defect / low progesterone
4. Polycystic ovarian syndrome
5. Non-classic adrenal hyperplasia
6. Thyroid disorder
7. Thin uterine lining
8. Autoimmune causes
9. Stress
10. Methylation defects
11. Male factor
12. Cervical mucous issues
13. Blood clotting disorders
14. Blocked fallopian tubes or other structural issues
15. Over-exercising / underweight

Endometriosis

SIGNS OF ENDOMETRIOSIS:

- Painful menstruation since puberty
- Pain that is difficult to manage with OTC pain medications
- Cramping starting the week prior to menstruation
- Diarrhea or loose stool with menstruation
- Painful ovulation
- Painful intercourse
- Mother or sister has endometriosis

Other clinical notes:

- May be associated with frequent antibiotics in childhood

Testing for Endometriosis

- Only accurate test is diagnosis through laparoscopy.
- Elevated CA125 may indicate endometriosis.
- Presence of endometriomas may be seen on ultrasound.

Treatment for Endometriosis

1. ***Inflammation***

- Anti-inflammatory diet, gluten-free diet, possibly vegan diet

2. ***Immune imbalance***

- Endometriosis as an autoimmune disease – omega-3 fish oils, probiotics
- Rebalance intestinal flora, especially yeast

3. ***Estrogen dominance***

- Treat constipation, use DIM, indole-3-carbinol to clear estrogens

4. ***Treating adhesions***

- Proteolytic enzymes, castor oil packs, Arvigo massage

5. ***Blood stasis***

- Chinese herbs and acupuncture

6. ***Pycnogenol supplementation –*** see study

Gluten-free diet: a new strategy for management of endometriosis related symptoms? Minerva Chir. 2012 Dec:67(6):499-504.

Authors: Marziali MI, Venza M, Lazzaro S, Lazzaro A, Micossi C, Stolfi VM.

Abstract

Pelvic pain affects 4% to 39% of women and accounts for 10-40% of all outpatient gynecologic visits. The etiology of painful endometriosis-related has not been fully delineated. No studies have been published concerning gluten-free diet administered to achieved relief of painful symptoms endometriosis-related. The aim of this retrospective study was to evaluate the effectiveness for the outcomes of endometriosis-related pain and quality of life of gluten-free diet in a follow-up of 12 months in patients with chronic pelvic pain endometriosis-related.

METHODS:

Two hundred seven patients with severe painful endometriosis-related symptoms entered the study. At enrolment time, the baseline values of painful symptoms were assessed by Visual Analogue Scale (VAS) for dysmenorrhoea, non-menstrual pelvic pain, and dyspareunia. According to VAS, pain severity was scored from 0-10; 0 indicating the absence of pain, and 1-4, 5-7 and 8-10 mild, moderate and severe respectively. A gluten-free diet was submitted to all patients and a new evaluation was performed after 12 months of diet. Student t test was used for statistical analysis.

RESULTS:

At 12 month follow-up, 156 patients (75%) reported statistically significant change in painful symptoms ($P<0.005$), 51 patients (25%) reported not improvement of symptoms. No patients reported worsening of pain. A considerable increase of scores for all domains of physical functioning, general health perception, vitality, social functioning, and mental health was observed in all patients ($P<0.005$).

CONCLUSION:

In our experience, painful symptoms of endometriosis decrease after 12 months of gluten free diet.

Effect of French maritime pine bark extract on endometriosis as compared with leuprorelin acetate. (Journal of Reproductive Medicine; 2007, Vol. 52, No. 8, 703-8.)

Authors: Takafumi Kohama; Kotaro Herai; Masaki Inoue

OBJECTIVE: To clarify the effect of Pycnogenol (Horphag Research, Geneva, Switzerland), French maritime pine bark extract, on endometriosis. STUDY DESIGN: Fifty-eight women were included in this study. They were operated on conservatively for endometriosis and surgically diagnosed with the condition. All patients were followed at 4, 12, 24 and 48 weeks after starting treatment to check for endometriosis signs and symptoms, including changes in CA-125 and estrogen levels (E2). Thirty-two patients in ***the Pycnogenol treatment group took 60 mg Pycnogenol orally a day for 48 weeks***. The 26 patients who received gonadotropin-releasing hormone agonist (Gn-RHa) were treated in the standard way. RESULTS: Treatment with Pycnogenol slowly but steadily reduced the symptom scores. Treatment with Gn-RHa reduced the scores more efficiently; however, 24 weeks after the end of treatment, the scores suggested a recurrence of signs. No influence of treatment on menstrual cycles or E2 was observed in the Pycnogenol group. ***CA-125 decreased*** in both treatment groups. Patients with smaller endometriomas responded better to treatment as compared to patients with larger endometriomas. In the Gn-RHa group, the lowering of CA-125 concentrations was far more pronounced; however, a clear rebound effect was observed. CONCLUSION: ***Pycnogenol is a therapeutic alternative to Gn-RHa in the treatment of endometriosis.***

Egg Quality

SIGNS OF EGG QUALITY ISSUES:

- Menstrual cycles are getting closer together
- Menses heavier at the start and tapering off quickly
- Over age 38
- Secondary infertility
- Mother/sister/aunt had premature menopause
- Poor responder to IVF treatment

Other clinical notes:

- Frequent air travel is associated with premature ovarian aging (radiation).
- Many X-rays in childhood – hip dysplasia, scoliosis.

Testing for Egg Quality Issues

- Day 3 FSH is > 10 IU/L
- Day 3 Estradiol is elevated >250 pmol/L (estradiol can suppress FSH)
- Low AMH (Anti-Muellarian hormone) relative to age (generally low is < 1.5 ng/mL)
- Low antral follicle count (resting follicles, seen on ultrasound). A low count is generally < 7.

Treatment for Egg Quality Issues

- Mitochondrial support:
  - Most focus to support egg quality, has been around mitochondrial function.
  - Coenzyme Q10 / Ubiquinol
  - PQQ (Pyrroloquinoline quinone): antioxidant that protects against mitochondrial damage, and promotes the spontaneous regeneration of new mitochondria within aging cells.
- Acupuncture and Chinese herbs
- DHEA: especially for premature ovarian insufficiency – many studies using 75 mg DHEA daily (test levels first)
- Stress reduction

Luteal Phase Defect / Low Progesterone

SIGNS OF LUTEAL PHASE DEFECT / LOW PROGESTERONE ISSUES:

- Short menstrual cycle (less than 26 days).
- Short luteal phase (10 or less days).
- Premenstrual spotting.
- Low luteal phase progesterone levels (< 35 nmol/L).
- Over age 38.

Other clinical notes:

- Low luteal phase progesterone is associated with prolonged / chronic stress. It is essential to address stress hormones too. (The body steals progesterone to make more cortisol).

Testing for Luteal Phase Defect / Low Progesterone:

- OPK testing to confirm ovulation date, and accurately measure luteal phase length.
- Day 22 or mid-luteal phase progesterone levels (low is < 35 nmol/L).
- BBT (basal body temperature) charting. An accurate way of measuring luteal phase length, progesterone stability, and premature progesterone decline.
- Salivary cortisol panel – to measure cortisol rhythm through the day.

Treatment for Luteal Phase Defect / Low Progesterone:

- Vitex agnus-castus – 150-200 mg standardized extract, before breakfast. Increases progesterone production.
- Other herbs:
  - Wild Yam (Dioscorea villosa),
  - Chinese herbs to support Kidney Yang: Paeonia lactiflora root Extract, Rehmannia glutinosa, Bupleurum chinensis
- Melatonin 3 mg at bedtime. Increases progesterone production.
- Vitamin B6: 100 mg daily
- Vitamin C: 750 mg daily. Increases progesterone levels,

Protective role of melatonin in progesterone production by human luteal cells. J Pineal Res. 2011;51(2):207-213.

Authors: Taketani T, Tamura H, Takasaki A, et al.

Abstract: This study investigated whether melatonin protects luteinized granulosa cells from reactive oxygen species (ROS) as an antioxidant to enhance progesterone production in the follicle during ovulation. Follicular fluid was sampled at the time of oocyte retrieval in women undergoing in vitro fertilization and embryo transfer (IVF-ET). Melatonin concentrations in the follicular fluid were positively correlated with progesterone concentrations ($r = 0.342$, $P < 0.05$) and negatively correlated with the concentration of 8-hydroxy-2′-deoxyguanosine (8-OHdG), an oxidative stress marker ($r = -0.342$, $P < 0.05$). The progesterone and 8-OHdG concentrations were negatively correlated ($r = -0.246$, $P < 0.05$). Luteinized granulosa cells were obtained at the time of oocyte retrieval in women undergoing IVF-ET. Cells were incubated with H_2O_2 (30, 50, 100 μm) in the presence or absence of melatonin (1, 10, 100 μg/mL). Progesterone production by luteinized granulosa cells was significantly inhibited by H_2O_2. Melatonin treatment overcame the inhibitory effect of H_2O_2. Twenty-five patients who had luteal phase defect (serum progesterone concentrations <10 ng/mL during the mid-luteal phase) were divided into two groups during the next treatment cycle: 14 women were given melatonin (3 mg/day at 22:00 hr) throughout the luteal phase and 11 women were given no medication as a control. **Melatonin treatment improved serum progesterone concentrations (>10 ng/mL during the mid-luteal phase) in nine of 14 women (64.3%)**, whereas only two of 11 women (18.1%) showed normal serum progesterone levels in the control group. In conclusion, melatonin protects granulosa cells undergoing luteinization from ROS in the follicle and contributes to luteinization for progesterone production during ovulation.

Polycystic Ovarian Syndrome

SIGNS OF PCOS:

- Irregular menstruation
- Acne
- Hirsutism
- Carrying weight central abdomen
- Family history of PCOS or NIDDM

Other Clinical Notes:

- Watch for different presentations – some patients may not fit classic appearance of PCOS and be thin with irregular menstruation and acne.

Testing for PCOS:

- Day 3: LH/FSH ratio – classically 3:1 ratio, but suspect anything where LH > FSH.
- Elevated DHEA
- High AMH
- Polycystic ovaries on ultrasound
- Insulin resistance: measure the HOMA IR to confirm
- Test for 17-OH progesterone to rule out non-classic congenital adrenal hyperplasia
- Check thyroid function, as hypothyroidism often comes with PCOS.

Treatment for PCOS: (brief overview)

Diet:

- The key is blood sugar stability, and lower carbohydrates / sugars.
- Could look like paleo diet, or general diet plan for NIDDM.

Supplements:

- Vitex
- Myo-Inositol
- Resveratrol
- Vitamin D

Exercise:

- Regular cardio exercise is essential for managing PCOS, as it improves sensitivity to insulin. Caution with overtraining at high intensity as it raises cortisol levels.

Stress management:

- High stress levels aggravate hormone imbalance with PCOS. Address high cortisol if needed.

Non-Classic Adrenal Hyperplasia

Also called late-onset CAH - this is the big mimicker of PCOS, and is caused by a defect in the 21-hydroxylase enzyme that converts 17-OH progesterone to cortisol.

SIGNS NON-CLASSIC ADRENAL HYPERPLASIA:

Also called late-onset CAH, or - this is the big mimicker of PCOS, and is caused by a defect in the 21-hydroxylase enzyme that converts 17-OH progesterone to cortisol.

- Signs of high androgens: acne, head hair thinning, hirsutism
- Irregular or absent menstruation
- Polycystic ovaries
- Early puberty
- Shorter height

Other clinical notes:

- Certain groups have higher rates of NCAH: Ashkenazi Jews: 1 in 27, Hispanics: 1 in 40, Italian 1in 300.
- Not all of these people will have significant symptoms, or require treatment for fertility.

Testing for Non-Classic Adrenal Hyperplasia:

- Initial screening: morning test for 17-OH progesterone, androstenedione and testosterone. This is best tested in the follicular phase of the cycle, as it may be hard to interpret in the luteal phase with irregular ovulation.
- Diagnosis is then confirmed with an ACTH stimulation test (which shows large amounts of 17-OH progesterone, instead of a high cortisol response).

Treatment for Non-Classic Adrenal Hyperplasia:

- Stimulate ovulation: Acupuncture, Vitex
- Support cervical fluid (the cervical fluid tends to be thicker and cloudier due to high progestens): Evening primrose oil, fertility-friendly lubricants
- Thicken the endometrial lining before ovulation: Cimicifuga racemosa
- Support cortisol levels: Adrenal glandulars

Fertility appears to decline earlier in women with untreated NCAH – encourage couples to try to conceive before age 35.

- Standard medical treatment of NCAH is with **corticosteroids**: hydrocortisone, prednisone, or dexamethasone – if your patient shows very irregular menstruation and signs of low cortisol levels, this treatment is likely needed.

Thyroid Disorder

SIGNS OF HYPOTHYROIDISM:

- Low basal body temperature
- Long menstrual cycles (>32 days)
- Overweight or difficulty losing weight
- Constipation
- Dry skin
- Fatigue
- Difficulty concentration / brain fog
- Swelling in the legs and ankles
- Miscarriage

Testing for Thyroid Disorder:

- Full thyroid panel: TSH, free T4, free T3, Anti-TPO, Anti-Thyroglobulin.
- Basal body temperature.

Treatment for Thyroid Disorder:

TSH > 5.0:

- Usually require medication in the context of fertility. Hypothyrodism is associated with difficulty conceiving and early miscarriage.

TSH 2.5-5.0

- This subclinical range can also affect fertility. Use Naturopathic treatment – tyrosine, Ashwagandha, iodine if indicated.
- Ideal range for fertility is TSH < 2.5.

Low free T3, with normal TSH and free T4

- This is caused by adrenal dysfunction and/or lack of nutrients for thyroid conversion (selenium, magnesium, zinc). Treat the adrenals!

Elevated thyroid antibodies

- Anti-inflammatory and gluten-free diet
- Selenium supplements (selenomethionine) – 200 mcg daily (lowers thyroid antibodies up to 30%).

Thin Uterine Lining

SIGNS OF THIN UTERINE LINING:

- Light / scanty menstruation
- Thin uterine lining on ultrasound (8 mm at ovulation).

Other Clinical Notes:

- This is a common finding with the use of Clomid for ovulation induction.
- A recent study has found that a thin uterine lining may be caused by use of oral contraceptives for > 10 years.

Effect of long-term combined oral contraceptive pill use on endometrial thickness. (Obstet Gynecol. 2012 Aug;120(2 Pt 1):348-54.)

Authors: Talukdar N1, Bentov Y, Chang PT, Esfandiari N, Nazemian Z, Casper RF.

ABSTRACT:

Thirty patients had endometrial thickness less than 7 mm and 107 had thickness of 7 mm or more. Mean years of combined OCP use in each group were 9.8±4.54 and 5.8±4.52, respectively (P<.001). ***With 10 years of combined OCP use as the threshold, the difference between the two groups (63.35% users in less than 7 mm group compared with 28.04% in the 7 mm or more thickness group) was highly significant*** (P<.001 by Fisher exact test), with an odds ratio of 4.43 (95% confidence interval 1.89-10.41). Past use of 5 years of OCPs was also associated with a significant (P=.002) difference in endometrial thickness. The mean endometrial thicknesses on cycle day 10 in patients using combined OCP for less than 10 years and 10 years or more were 9.54±1.88 mm and 8.48±2.33 mm, respectively, with P=.007. ***The mean endometrial thickness was 9.72±1.69 mm in less than 5 years*** and 8.81±2.23 mm in 5 or more years of use, respectively (P=.008). Cycle cancellation rates in the less than 7 mm group and 7 mm or greater endometrial thickness group were 23% and 4%, respectively (P=.002), but there was no difference in the clinical pregnancy rates between the two groups (13% compared with 27%, respectively; P=.15).

CONCLUSION:

Long-term combined OCP use (5 years or more) can potentially affect optimal endometrial growth, leading to a higher cancellation rate and longer stimulation in frozen embryo transfer cycles. These findings suggest a previously unidentified adverse effect of long-term combined OCP use in women who are anticipating future fertility.

Testing for Thin Uterine Lining:

- Ultrasound measurement to check uterine lining thickness at ovulation. Optimal lining thickness is at least 7mm, optimally 9mm
- Estadiol measurement – may be low on testing through the folllicular phase.

Treatment for Thin Uterine Lining:

- Red raspberry leaf tea: used from day 3 through to ovulation (3 cups daily).
- Black cohosh (80-120 mg daily) from 1 to 12.
- Estrace – may be required

- Thin lining due to long-term oral contraceptive use may not respond to these treatments because of a potential alteration of the ratios of estrogen and progesterone receptors in the lining.

Adding phytoestrogens to clomiphene induction in unexplained infertility patients – a randomized trial. *Reprod Biomed Online*. 2009;19(4):501–507

Authors: Shahin AY, Ismail AM, Zahran KM, Makhlouf AM.

This study investigated the role of oral phytoestrogens in improving pregnancy rate and cycle outcomes with clomiphene citrate. Patients with unexplained infertility and recurrent clomiphene citrate induction failure, were randomly divided into two groups: group I (n = 60) and group II (n = 59). Both groups received clomiphene citrate 150 mg per day (days 3 to 7). Group I received additional oral phytoestrogen (*Cimicifuga racemosa*) 120 mg/day from days 1 to 12. Human chorionic gonadotrophin (HCG) injection (10,000 IU i.m.) was given and timed intercourse was recommended when a leading follicle reached >17 mm and serum oestradiol exceeded 200 (pg/ml). There was a non-significant shortening of induction cycles in group I. Oestradiol and LH concentrations were higher in group I compared with group II. Endometrial thickness, serum progesterone and clinical pregnancy rate were significantly higher in group I (8.9 ± 1.4 mm versus 7.5 ± 1.3 mm, $P < 0.001$; 13.3 ± 3.1 ng/ml versus 9.3 ± 2.0 ng/ml, $P < 0.01$; 36.7% versus 13.6%, $P < 0.01$, respectively). It is concluded that adding *C. racemosa* rhizome dry extract to clomiphene citrate induction can improve the pregnancy rate and cycle outcomes in these couples.

Autoimmune causes

SIGNS OF AUTOIMMUNE CAUSES:

- Any autoimmune condition – Hashimoto's, Grave's, rheumatoid arthritis, lupus
- Family history of autoimmune disease
- Allergies, eczema, asthma
- Many food intolerances
- Celiac disease
- Endometriosis

Testing for Autoimmune Causes:

- Test autoimmune markers, especially thyroid antibodies:
  - Anti-TPO, Anti-TG, RF, ANA to begin with
- Test for celiac disease
- Food intolerance test: IgG test as a marker for possible immune causes

More advanced tests can be ordered through a reproductive endocrinologist: NK assay, TH1:TH2 cytokine ratios, T-regulatory cells among others. Most thorough testing through the Alan E. Beer clinic in California.

Treatment for Autoimmune Causes:

Nutrition = most important part

- Address food intolerances
- If no food intolerance test, avoid gluten and dairy
- General ant-inflammatory diet
- Paleo / autoimmune diet (low-lectin) – avoiding grains, legumes, dairy, sugar

Supplements:

- Omega-3 fish oils
- Probiotics
- Astragalus / Codonopsis
- Curcumin
- GI repair supplements – ex. L-glutamine

Stress

SIGNS OF STRESS AFFECTING FERTILITY:

- Short luteal phase
- Low luteal phase progesterone
- 'Saddle pattern' in the luteal phase seen on BBT charting
- Elevated prolactin levels
- Anxiety, insomnia, worry
- Prolonged period of high stress

Other clinical notes:

- Many repoductive hormones are affected by the HPA axis: cortisol, prolactin, LH, FSH, gonadotrophin releasing hormone (GnRH) and melatonin.
- It is no wonder stress can have a direct impact on fertility.

Testing for Stress:

- Salivary hormone test for 4 point cortisol rhythm and DHEA
- Prolactin levels
- Full thyroid panel (conversion of fT4 to fT3 may be affected)
- Mid-luteal phase progesterone
- BBT charting

Treatment for Stress:

- Acupuncture
- Stress management tools
- If cortisol is high, address with supplements – relora, lactium, phosphorylated serine, holy basil
- Support progesterone levels and lower prolactin with Vitex
- Psychotherapy is recommended if the main cause of stress is infertility.

Methylation Defects

SIGNS OF METHYLATION DEFECTS:

- Personal or family history or early cardiovascular disease, blood clots, mood disorder especially bipolar, miscarriage, autism / aspberger's, addiction, schizophrenia.
- Frequent miscarriage

Other clinical notes:

- Approximately 35% of the general population carry some sort of polymorphism with the MTHFR gene

Testing for Methylation Defects:

- MTHFR genetic test – can be tested through '23 and me', Spectracell lab, or in combination with Prothrobin and Factor V Leiden through Bay Area Genetic Lab.
- Test vitamin B12 levels and RBC folate.
- If MTHFR is homozygous C677T – also test homocysteine levels (should be < 9.0 umol/L)

Treatment for Methylation Defects:

MTHFR C677T–homozygous

> MTHFR C677T & A1298C–heterozygous

> MTHFR A1298C–homozygous

> MTHFR C677T – heterozygous

Treat with:

- Methylfolate – amount varies – start with 1 mg daily (max. 3-4 mg daily)
- Methycobalamin
- Other nutrients to consider: NAC, glutathione, betaine, vitamin B6, curcumin, EPA/ DHA

Additional resources: www.mthfr.net

Recurrent pregnancy loss and its relation to combined parental thrombophilic gene mutations. (Genet Test Mol Biomarkers. 2012 Apr;16(4):279-86.)

Authors: Ozdemir OI, Yenicesu GI, Silan F, Koskal B, Atik A, Ozen F.

BACKGROUND AND AIM: Recurrent pregnancy loss (RPL) is a heterogeneous disorder that has been associated with antiphospholipid syndrome and other prothrombotic parameters. We aimed to investigate the prevalence of 12 thrombophilic gene mutations in RPL couples in the current results.

METHOD: In a total of 543 Turkish women with RPL and 327 of their male partners (870 individuals with RPL), and a control group of 106 fertile couples (control) were analyzed for factor V leiden (FVL), factor V H1299R, factor II prothrombin G20210A, FXIII V34L, β-fibrinogen -455G>A, plasminogen activator inhibitor-1 (PAI-1), GPIIIa L33P (HPA-1 a/b L33P), methylenetetrahydrofolate reductase (MTHFR) C677T, MTHFR A1298C, ACE I/D, Apo B R3500Q, and Apo E genes.

RESULTS: The overall, heterozygous and/or homozygous point mutations in FVL-FVR2, ApoE2, PAI-1, MTHFR C677T-A1298C, and ACE genes were associated with RPL. There was no meaningful association between RPL and other studied genes.

CONCLUSION: The homozygosity of 4G in PAI-1 and MTHFR C677T genes in women with RPL, and heterozygosity of FVL, FVR2, ACE, and ApoE2 genes in both parents play crucial role in RPL and should be considered as a risk factor in RPL. Current results showed that RPL is related to combined parental (not only maternal) thrombophilic gene mutations.

Male Factors

SIGNS OF MALE FACTORS:

- High stress
- Lifestyle – especially high alcohol intake (> 10 drinks per week)
- Low libido
- Erectile dysfunction
- Low testosterone
- Autoimmune conditions
- Medications
- Age > 45 years

Other clinical notes:

- Basic numbers for semen analysis may look good (count, motility, morphology), but if your patient is not healthy, there are likely other issues.

Testing for Male Factors:

- Semen analysis
- DNA fragmentation
- Thyroid function
- MTHFR
- Testosterone levels
- Mycoplasma and ureaplasma infection

Treatment Male Factors:

Many studies on the role of oxidative stress and mitochondrial dysfunction on male infertility:

- Antioxidants
- Reduce / eliminate alcohol, smoking
- CoEnzyme Q10: 600 mg daily for 12 months, showed significant improvement in semen count, morphology and motility.

(Safarinejad MR. The effect of coenzyme Q10 supplementation on partner pregnancy rate in infertile men with idiopathic oligoasthenoteratozoospermia: an open-label prospective study. *Int Urol Nephrol* 2012;44(3):689-700.)

Other comments:

- Treat autoimmune conditions
- Address stress hormones
- Optimize thyroid function
- High quality men's multivitmain

Effects of oral antioxidant treatment upon the dynamics of human sperm DNA fragmentation and subpopulations of sperm with highly degraded DNA. (Andrologia 2013 June;45(3), 211-216)

Authors: Abad C, Amengual MJ, Gosalvez J, Coward K, Hannaoui N, Benet J, Garcia-Peiro A, Prats J. Andrologia 2012

The primary aim of this study was to determine the effect of oral antioxidant treatment (1500 mg of l-Carnitine; 60 mg of vitamin C; 20 mg of coenzyme Q10; 10 mg of vitamin E; 10 mg of zinc; 200 μg of vitamin B9; 50 μg of selenium; 1 μg of vitamin B12) during a time period of 3 months upon the dynamics of sperm DNA fragmentation following varying periods of sperm storage (0 h, 2 h, 6 h, 8 h and 24 h) at 37 °C in a cohort of 20 infertile patients diagnosed with asthenoteratozoospermia. A secondary objective was to use the sperm chromatin dispersion test (SCD) to study antioxidant effects upon a specific subpopulation of highly DNA degraded sperm (DDS). Semen parameters and pregnancy rate (PR) were also determined. Results showed a significant improvement of DNA integrity at all incubation points ($P < 0.01$). The proportion of DDS was also significantly reduced ($P < 0.05$). Semen analysis data showed a significant increase in concentration, motility, vitality and morphology parameters. Our results suggest that antioxidant treatment improves sperm quality not only in terms of key seminal parameters and basal DNA damage, but also helps to maintain DNA integrity. Prior administration of antioxidants could therefore promote better outcomes following assisted reproductive techniques.

OVERVIEW

A healthy patient is much more likely to conceive – treat fertility patients as you would any other patient.

Initial lab testing:

- Day 3 bloodwork
- Mid-luteal phase progesterone
- Thorough thyroid panel (including thyroid antibodies)
- CA125
- MTHFR
- Salivary adrenal panel
- Celiac test
- Food intolerance test.

If in doubt with a fertility diagnosis:

1. Check luteal phase progesterone and support ovulation.
2. Check the thyroid thoroughly (TSH, fT4, fT3, thyroid antibodies, BBT).
3. Support egg quality with antioxidants.
4. Lower stress levels.
5. Reduce inflammation with nutrition and supplements.
6. Treat the male partner with a minimum of a high-quality multivitamin + coenzyme Q10, and a reduction in alcohol.

Any Questions?