Join Hands For Reproductive Health Solutions

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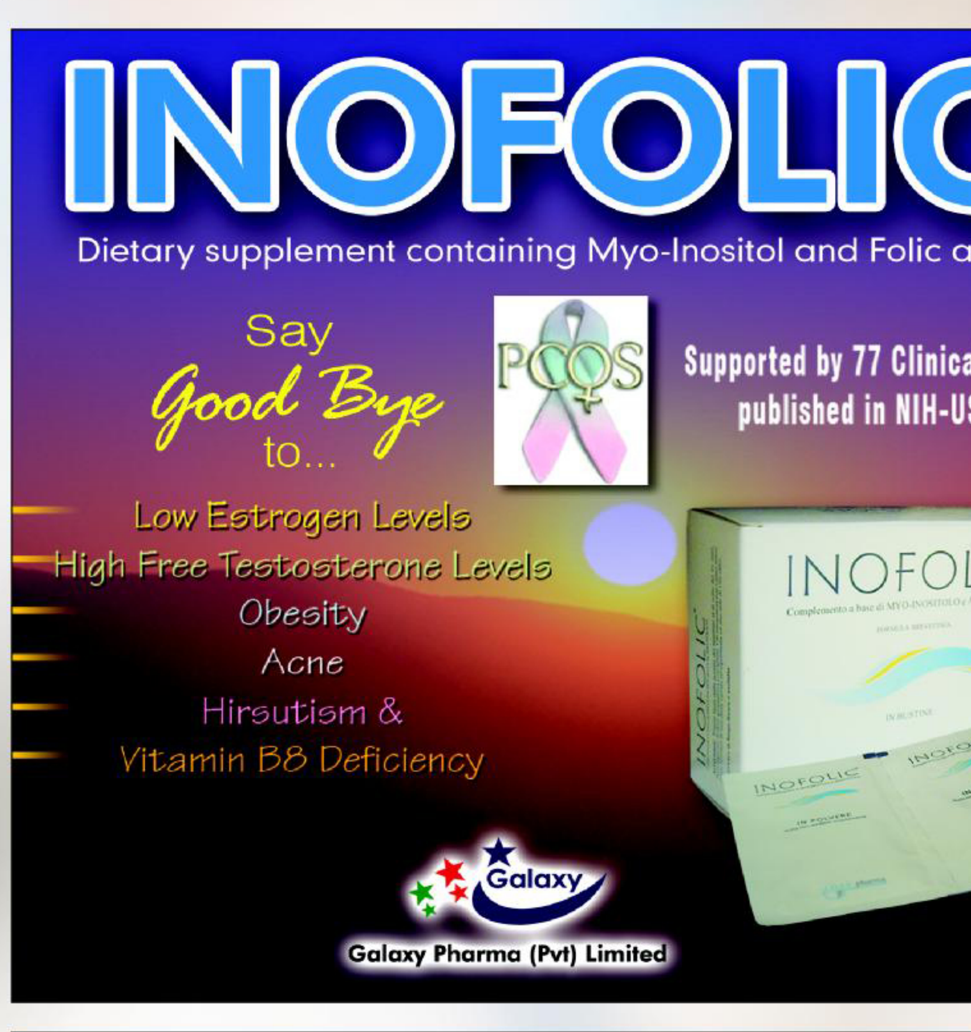


New Research Development 1

Breakthrough in PCOS

Assessment of the modification of the clinical, endocrinal and metabolical profile of patients with PCOS syndrome treated with myo-inositol.

Venturella R, Mocciaro R, De Trana E, D'Alessandro P, Morelli M, Zullo F.

Abstract

AIM:
The aim of this study was to evaluate the effects of 24 weeks administration of myo-inositol plus folic acid (Inofolic ®) on clinical, endocrine and metabolic parameters of polycystic ovary syndrome (PCOS) patients.

METHODS:
Seventy women, 18 to 35 years, were enrolled; 35 patients were enrolled as study group and treated with Inofolic ® (200 μg folic acid plus myo-inositol 2 g per day) for 24 weeks. The other 35 patients, similar at baseline to patients in the study group, were enrolled as control group and received no treatment. In all patients the restoration of ovulation and variations of the endocrine and metabolic profile after treatment were assessed.

RESULTS:
After 24 weeks, only five of 35 patients treated with Inofolic ® and 14 of 35 patients in the control group remained anovulatory and this difference was statistically significant. Body mass index decreased significantly in the study group, while a non-significant increasing was recorded in the control group. Moreover, non-significant reduction in circulating levels of LDL, and a statistically significant increase in the levels of HDL in the study group were observed.

CONCLUSION:
Treatment with Inofolic ® allows to restore rapidly spontaneous ovulation in amenorrheic patients with PCOS and shows a significant advantage in terms of reduction in BMI and a positive trend in terms of changes in serum lipid profile.

New Research Development 2

Randomized, double blind placebo-controlled trial: effects of myo-inositol on ovarian function and metabolic factors in women with PCOS.

Gerli S, Papaleo E, Ferrari A, Di Renzo GC.

Abstract

Oligomenorrhea and polycystic ovaries in women are one of the most important causes of the high incidence of ovulation failure. This is linked, perhaps, to insulin resistance and related metabolic features. A small number of reports show that myo-inositol improves ovarian function, but in these trials the quality of evidence supporting ovulation is suboptimal. Furthermore, few of them have been placebo-controlled. The aim of our study was to use a double-blind, placebo-controlled approach with detailed assessment of ovarian activity (two blood samples per week) to assess the validity of this therapeutic approach in this group of women. Of the 92 patients randomized, 47 received 400 mcg folic acid as placebo, and 45 received myo-inositol plus folic acid (4 g myo-inositol plus 400 mcg folic acid). The ovulation frequency assessed by the ratio of luteal phase weeks to observation weeks was significantly ($P < 0.01$) higher in the treated group (25%) compared with the placebo (15%), and the time to first ovulation was significantly ($P < 0.05$) shorter [24.5 d; 95% confidence interval (CI), 18, 31; compared with 40.5 d; 95% CI, 27, 54]. The number of patients failing to ovulate during the placebo-treatment period was higher ($P < 0.05$) in the placebo group, and the majority of ovulations were characterized by normal progesterone concentrations in both groups. The effect of myo-inositol on follicular maturation was rapid, because the E2 circulating concentration increased over the first week of treatment only in the myo-inositol group. A significant increase in circulating high-density lipoprotein was observed only in the myo-inositol-treated group. Metabolic risk factor benefits of myo-inositol treatment were not observed in the morbidly obese subgroup of patients (body mass index > 37). After 14 weeks of myo-inositol or placebo therapy, no change in fasting glucose concentrations, fasting insulin, or insulin responses to glucose challenge was recorded. There was an inverse relationship between body mass and treatment efficacy. In fact a significant weight loss (and leptin reduction) ($P < 0.01$) was recorded in the myo-inositol group, whereas the placebo group actually increased weight ($P < 0.05$). These data support a beneficial effect of myo-inositol in women with oligomenorrhea and polycystic ovaries in improving ovarian function.

Scientific Update

Recombinant human FSH reduces sperm DNA fragmentation in men with idiopathic oligoasthenoteratozoospermia.

Colacurci N, Monti MG, Fornaro F, Izzo G, Izzo P, Trotta C, Mele D, De Franciscis P.

Abstract

A prospective randomized controlled study was designed to evaluate the effects of recombinant human follicle-stimulating hormone (rFSH) treatment on sperm DNA fragmentation in men with idiopathic oligoasthenoteratozoospermia (iOAT). One hundred twenty-nine men with sperm count less than 10 x 10(6) spermatozoa/mL and forward motility <25% were included; normal serum levels of FSH, luteinizing hormone (LH), and testosterone, and no other causes of infertility were enrolled. The patients were randomized into 2 groups: 65 men were treated on alternate days for 90 days with injections of 150 IU rFSH, and 64 subjects received nonantioxidant vitamin supplements. Main outcome measures were serum levels of FSH, LH, testosterone, and inhibin B and DNA fragmentation index (DFI) at baseline and after 90 days. No significant differences were observed between the 2 groups with regard to sperm parameters and hormone values. The DFI was similar between the 2 groups at the time of the enrollment but reduced significantly ($P < .05$) after rFSH therapy in study group, whereas no significant variation occurred in the control group. In the subgroup of patients with high basal DFI values (>15%), rFSH treatment significantly increased DFI ($P < .01$), whereas no significant variation occurred after 90 days of vitamin supplements. We conclude that rFSH administration improves sperm DNA integrity in iOAT men with increased DFI values. The degree of sperm DFI might be useful to identify those iOAT patients in which rFSH treatment can be advantageous.

Embryo Quality for successful Pregnancy Rates

Effects of melatonin on ovarian follicles.

Maganhin CC, Fuchs LF, Simões RS, Oliveira-Filho RM, de Jesus Simões M, Baracat EC, Soares JM Jr.

Abstract

OBJECTIVE:
To evaluate the histomorphometry and expression of Ki-67 and c-kit in ovarian follicles of pinealectomized or melatonin-treated pinealectomized rats.

STUDY DESIGN:
Forty adult rats were randomly divided into four groups of 10 animals: Group I - control; Group II - sham-pinealectomized; Group III - pinealectomized (Px), and Group IV - Px treated with melatonin (10 microgram/per night, per animal). After two months' treatment, on the night of proestrous, the animals were placed in metabolic cages for night urine collection and subsequent measurement of 6-sulfatoxymelatonin (6-SMT). The rats were anesthetized, blood samples were taken for estrogen and progesterone determinations, and they were then euthanized. The ovaries were dissected out for further histological and immunohistochemical analyses. Data were first submitted to analysis of variance (ANOVA) complemented with the Tukey-Kramer test for multiple comparisons ($P<0.05$).

RESULTS:
The urinary levels of 6-SMT and serum progesterone were lower in the Px group (GIII). Exogenous melatonin treatment restored both blood melatonin and 6-SMT urinary levels. The histomorphometric data in Group III revealed a significant increase of degenerating antral and non-antral follicles with regard to the other groups. In addition no corpora lutea were observed in this group. No significant differences were noticed regarding the number of corpora lutea among the other groups (I, II and IV), but the number of cells and the thickness of the theca interna of Px animals (Group III) were higher than in the other groups. Conversely, the density of progesterone receptors (fmol/g) in the ovaries of Group III was significantly lower than in the other groups.

CONCLUSION:
Our data indicate that melatonin exerts a role on the maintenance of a proper follicular function, and is thus important for ovulation and progesterone production.

Improving pregnancy chances in women with Diminished Ovarian Reserves (DOR)

Dehydroepiandrosterone (DHEA) reduces embryo aneuploidy: direct evidence from preimplantation genetic screening (PGS).

Gleicher N, Weghofer A, Barad DH.

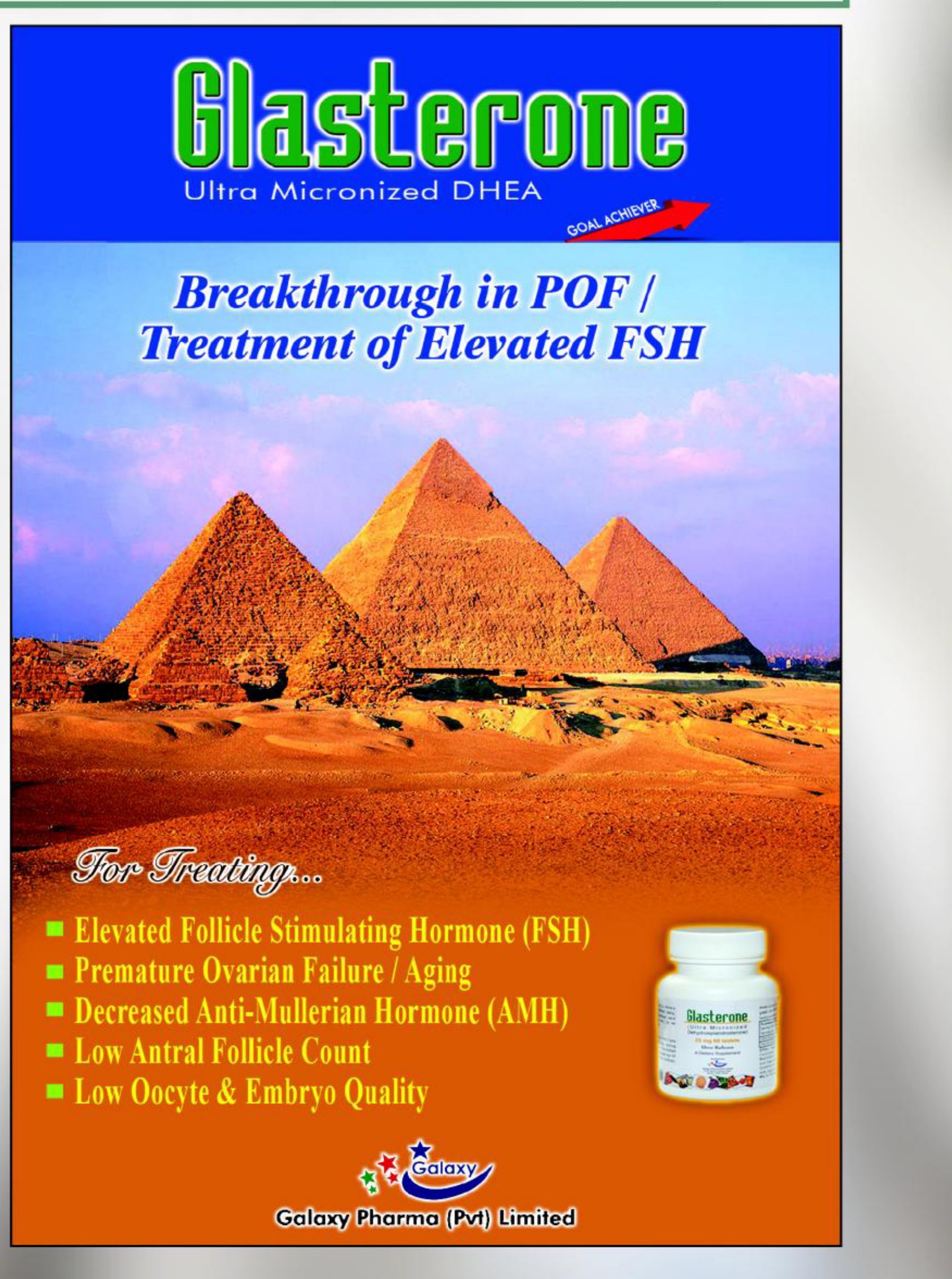
Abstract

BACKGROUND:
Dehydroepiandrosterone (DHEA) has been reported to improve pregnancy chances in women with diminished ovarian reserve (DOR), and to reduce miscarriage rates by 50-80%. Such an effect is mathematically inconceivable without beneficial effects on embryo ploidy. This study, therefore, assesses effects of DHEA on embryo aneuploidy.

METHODS:
In a 1:2, matched case control study 22 consecutive women with DOR, supplemented with DHEA, underwent preimplantation genetic screening (PGS) of embryos during in vitro fertilization (IVF) cycles. Each was matched by patient age and time period of IVF with two control IVF cycles without DHEA supplementation (n = 44). PGS was performed for chromosomes X, Y, 13, 16, 18, 21 and 22, and involved determination of numbers and percentages of aneuploid embryos.

RESULTS:
DHEA supplementation to a significant degree reduced number ($P = 0.029$) and percentages ($P < 0.001$) of aneuploid embryos, adjusted for relevant covariates. Short term supplementation (4-12 weeks) resulted in greatest reduction in aneuploidy (21.6%, 95% CI -2.871-46.031).

DISCUSSION:
Beneficial DHEA effects on DOR patients, at least partially, are the likely consequence of lower embryo aneuploidy. DHEA supplementation also deserves investigation in older fertile women, attempting to conceive, where a similar effect, potentially, could positively affect public health.



Successful pregnancy outcome

Rescue human chorionic gonadotropin for false empty follicle syndrome: optimism for successful pregnancy outcome.

Doyle JO, Attaman JA, Styer AK, Sabatini ME, Petrozza JC, Toth TL.

Abstract

OBJECTIVE:
To describe two cases of successful pregnancy after a rescue course of hCG in the setting of false empty follicle syndrome.

DESIGN:
Case report.

SETTING:
Academic medical center.

PATIENT(S):
Two patients undergoing ultrasound-guided oocyte retrieval with failure to obtain oocytes during oocyte retrieval.

INTERVENTION(S):
Rescue course of hCG with second oocyte retrieval 35 hours later.

MAIN OUTCOME MEASURE(S):
Live birth.

RESULT(S):
Two live-birth pregnancies.

CONCLUSION(S):
Live-birth pregnancies are a realistic possibility after administration of a rescue course of hCG and repeat oocyte retrieval in the setting of false empty follicle syndrome.

Letrozole in a low-cost in vitro fertilization protocol in intracytoplasmic sperm injection cycles for male factor infertility: A randomized controlled trial.

Mukherjee S, Sharma S, Chakravarty BN.

Abstract

INTRODUCTION:
Letrozole, a selective aromatase inhibitor, reduces the total dose of gonadotropin required for inducing follicular maturation. We evaluated if incorporation of letrozole could be an effective alternative for low-cost in vitro fertilization (IVF) protocol particularly in intracytoplasmic sperm injection (ICSI) cycles where male factor infertility is the sole indication for IVF.

MATERIALS AND METHODS:
It is a randomized controlled single-blind trial. 94 women with history of severe male factor infertility were selected. 42 women (study group) received letrozole, 5 mg daily from day 3-7 and recombinant FSH (rFSH) 75IU/day from day 5 continuously till hCG injection. 52 women (control group) underwent continuous stimulation by rFSH (150-225IU/day) from day 2. GnRH-antagonist (Inj. Orgalutran 0.25 ml sub-cutaneous) was started at maximum follicle size of 14 in both groups. Ovulation was triggered by 10,000IU of hCG followed by IVF-ET. Main outcome measures were total dose of rFSH (IU/cycle), terminal E2 (pg/ml), number of mature follicles, number of oocyte retrieved, transferable embryo, endometrial thickness, pregnancy rate and mean expenditure. Statistical analysis is done by using SPSS11.

RESULTS:
As compared to control group (1756 ± 75IU), the study group i.e., Let-rFSH received (625 ± 98IU) significantly lower ($P = 0.0001$) total dose of rFSH. Terminal E2 was significantly lower ($P = 0.0001$) in study group than control (830 ± 36 vs. 1076 ± 41 pg/ml) with significant increment in endometrial thickness ($P = 0.0008$) in study group, (9.1 ± 0.32 vs. 8.7 ± 0.69) which maintained an improved pregnancy rate though nonsignificant. The risk of hyperstimulation had significantly ($P = 0.01$) reduced in study group than control (0 vs. 7).Treatment outcome in all other aspects including pregnancy rate were statistically comparable. Per cycle mean expenditure was reduced by 34% in study group than control.

CONCLUSION:
Adjunctive use of letrozole may be an effective mean of low-cost IVF therapy.

Improving Quality of Life

Supplementation with Pycnogenol® improves signs and symptoms of menopausal transition.

Errichi S, Bottari A, Belcaro G, Cesarone MR, Hosoi M, Cornelli U, Dugall M, Ledda A, Feragalli B.

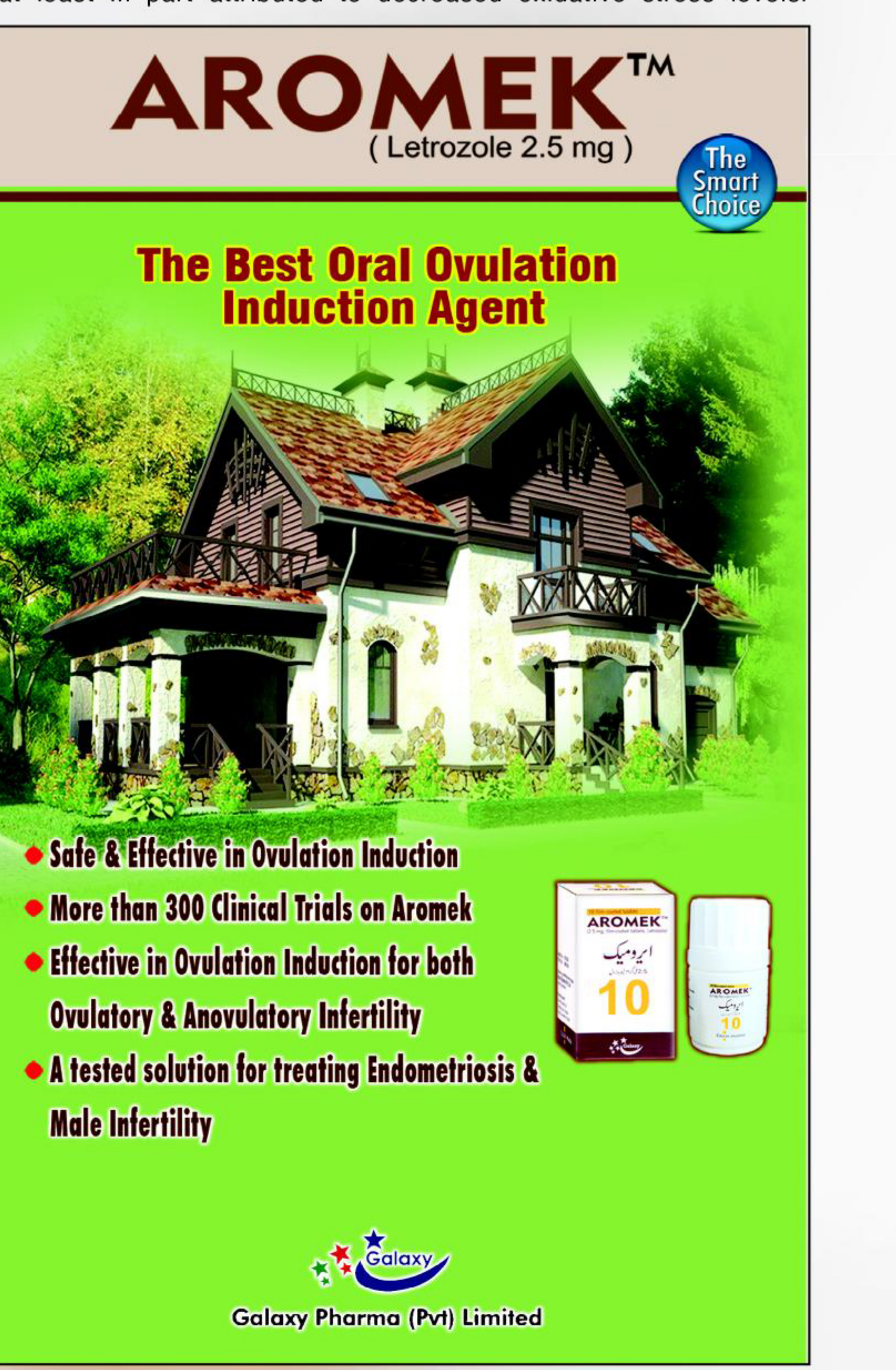
Abstract

AIM:
The aim of this study was to evaluate the efficacy of Pycnogenol® standardized pine bark extract for alleviation of signs and symptoms associated with menopausal transition.

METHODS:
Pycnogenol® was used by 38 women as daily supplement in a dosage of 100 mg over an eight week period and menopausal symptoms were evaluated by means of a scoring system, based on a total number of 33 common signs and symptoms. A parallel control group of 32 comparable women was also followed up for the same period. Pycnogenol® was well tolerated, no side effects were reported and the compliance was very good with 98.6% of tablets used as prescribed. A range of 33 menopausal symptoms were evaluated using a scoring system with values ranging from zero (absent) to maximum 4 (very serious).

RESULTS:
A subset of six most common symptoms comprising hot flushes, night sweats, mood swings, irregular periods, loss of libido and vaginal dryness showed a decrease from average 2.67/4 to 1.45/4 after 8 weeks supplementation with Pycnogenol®. The control group of women showed no change from initial average 2.72/4 to 2.73/4 after eight weeks. The improvement of symptoms was statistical significant compared to the control group. Further symptoms related to fatigue, sleeping disorders, concentration and memory problems, dizziness, depression and irritability all improved significantly with Pycnogenol® compared to baseline values but did not reach statistical significance compared to the control group of women. The sensation of pain related to headaches, breast pain, the feeling of "electric shocks", tingling extremities, burning tongue and itchy skin all improved significantly after intake of Pycnogenol® for eight weeks compared to baseline. Specifically the sensation of "electric shocks" and digestive problems improved significantly with Pycnogenol® as compared to women in the control group. The presence of elevated oxidative stress in women was investigated measuring capillary blood plasma free radicals. Oxidative stress was significantly lowered after four weeks ($P<0.05$) and eight weeks ($P<0.022$) in the Pycnogenol® group while no significant changes were observed in the control group at any time.

CONCLUSION:
Pycnogenol® significantly contributed to reduce signs and symptoms associated with menopausal transitions in women investigated in this study. Furthermore, Pycnogenol® improved the quality of life of most women and these benefits may be at least in part attributed to decreased oxidative stress levels.



Dealing with High Risk Pregnancy

Utrogestan and high risk pregnancy

Marinov B, Petkova S, Dukovski A, Georgiev G, Garnizov T, Manchev V, Kolarov G, Iunakova M.

Abstract

Utrogestan is a modern progesterone, which shows maximal effectiveness with minimal side effects. It is a natural progesterone in micronized form, which makes it suitable for oral administration and vaginal application with same effectiveness. The aim of our retrospective study was to evaluate the therapeutical effects of Utrogestan in women with threatened abortion in the first trimester. Our experience dated from about one year and a half. Sixty eight women were treated for threatened abortion with a daily dose of 400 mg Utrogestan. The treatment continued at least 14 days/average 21 days. Utrogestan was administered orally twice daily. The main indications were first or consecutive threatened spontaneous abortion in first trimester. For the period of time no side effects and subjective complaints were established except particular cases of slight headache and dizziness after morning application. Sixty one of the sixty eight women were dehospitalised with healthy pregnancy with no side effects. In our experience we preferred to use the drug in women with lutein insufficiency before pregnancy. We conclude that Utrogestan can be widely applied in Obstetrics with the proper indications, such as threatened abortion in the first trimester. The prophylactic treatment in women with slighter complaints like dull pain and weight Utrogestan is applied one tablet twice daily. In graver cases the starting dosage is two tablets two or three times daily.

A promising treatment for Erectile Dysfunction...

Improvement of erectile function with Prelox: a randomized, double-blind, placebo-controlled, crossover trial.

Stanislavov R, Nikolova V, Rohdewald P.

Abstract

In a randomly allocated, double-blind, placebo-controlled, crossover design, 50 patients with mild to moderate erectile dysfunction (ED) were treated for 1 month with placebo or a combination of L-arginine aspartate and Pycnogenol (Prelox). Patients reported sexual function from diaries. Testosterone levels and endothelial NO synthase (e-NOS) were monitored along with routine clinical chemistry. Intake of Pycnogenol for 1 month restored erectile function to normal. Intercourse frequency doubled. e-NOS in spermatozoa and testosterone levels in blood increased significantly. Cholesterol levels and blood pressure were lowered. No unwanted effects were reported. Prelox is a promising alternative to treat mild to moderate ED.