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Effect two doses of indomethacin on two grades

of oligospermia patients.

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Abstract

In this study we used two doses of indomethacin drug for two cases mild and sever of oligospermia in men

Twenty patients were suffering for long time of infertility, for this reason sperm concentration was 1×10^6 or less . The patients divided into two groups.

The first group received 25 mg/twice a day. and the second group received 25 mg/three time a day for every cases mild and sever.

Blood sample in all cases were taken for FSH LH and T(Testosterone). assay before treatment (base line level) as well semen sample were taken from each patients for analysis.

After 30,40,50 and 60 days of indomethacin treatment were showed a significant differences for gonadotrphin hormones and sperm concentration as well after treatment pregnancies were happened for patients sufered from infertility.

Indomethacin drugs acted primarily on the testes causing a drop in T levels and thereby causing an increase in gonadotrophin, that mean the drugs acted on the hypothalamus - hypophysis axis causing an increase in FSH a lone and on the testes causing a decrease in T level which in turn caused an increase in LH.

In this work, we found that oligospermic men had improvements 50% for mild cases and 70% for sever

cases for the drug doses 2x25 and 3 x 25 mg/day respectively, sometime oligospermic patients have a high level of testosterone, formed in the leydig.

Cells which could be deleterious to their fertility. indomethacin inhibited estrogen formation and caused an increase in fertility.

Indomethacin lower seminal prostaglandin levels but do not influence on sperm motion (12).

Seminal parameters (volume, concentration, motility, and morphology of spermatozoa) was elevated in basal condition at the end of endomethacin treatment at daily oral dose of 100mg for thirty days.

Prostaglandin inhibition was correlated with significant improvement in sperm concentration and motility (13).

Introduction

Indylon is a highly effective anti-inflammatory agent with marked pain relieving and fever reducing properties (indomethacin) is a well documented anti-rheumatic compound particularly, valued for its effectiveness at the a cute stage.

Indylon capsules containing 25 mg indomethacin which it act on the hypothalamus- hupophysis axises causing an increase in gonadotrophin hormones and it will allow to complete the cycle of spermatogeosis if the period of treatment continued for 60 day and will achieved the capacity of pregnancy.

In recent years seversal articles (4.5.6.7) have been published on animal and human clinical experiments with anti- inflammatory drugs, pointing to the deleterious effect of prostaglandin (PGS) on spermatogensis and showing that spermatogensis is improved by treatment with PG

synthetase inhibitors. NSAIDS drugs act by slowing the body production of prostaglandins. Common NSAIDS include ibuprofen, naproxen and indomethacin.

Material and Methods

Twenty oligospermic patients with a sperm count of 1 x 10^6/ml, were divided into groups according to treatment 60 days of treatment followed by l0 days of abservation for a total of 70 days.

1) Ten oligospermic patients recieved 2x25 mg indomethacin .

2) Another ten oligospermic recieved 3 x 25 mg indomethacin. Blood and sperm samples in all casses were taken before treatment and after 30,40,50,60 and 70 days to measure FSH,LH,T and sperm count.

Semen was collected in sterilized bottles by masturbation. FSH and LH were assayed by radioimmunoassay using a commercial kit.

This study was carried out at high institute of heath-siret-Libyan Arab Jamahiriya for period started from 10th of mach until 10th of June 2008.

Normal values (for both FSH and LH) in our lab. are 3 to 30 M. I. U/ml. T (Sorin st. Ouentin yveline, France was quantited by the method (1).the statistical procedure used analysis of variance test (2,3).

Results:

patients who given a daily one of two doses of indomethacin 2x25 and 3 x25 mg caused increase in the levels of plasma FSH and LH respectively over the base

line was obtained after 60 days of treatment p <0.05 and decreased in the level of testosterne (table 1).

The sperm concentration was twice as a high as the intial level in the two grade patients mild and sever oligospermia (Table2).

The highest rate of pregnancies occured with 3 x25 mg indomethacin p<0.01 compared with dose 2x25 mg p <0.05 (Table 3).

The patients of oligospermia had improvement percentage 50% in sperm concentration for doses 2x25 mg/day of indomethacin compared with 70% for doses 3x25 mg/day of the some drugs.

Discussion:

In this study we used two different indomethacin regimens of therapy 2x25 mg/day and 3x25 mg/day. our finding that anti- inflammatory drugs increase FSH, LH and sperm concentration.

indomethacin drugs acted on the testes and causing an increase in gonadotrophins and decrease in testosterone levels. this drugs inhibited estrogen formed in their leydig cells and in this way caused increase in fertility.

The treatment will be continued for 60 days in order to be effective and to chieve a complete cycle of spermarogensis.

The study suggested an increase in FSH, LH, and T (testosterone) level in men treated with indomethacine or ibuprofen with 75mg /day of drug increased concentration was observed with pregnancy rate of 40%.

LH and FSH both bind to the leydig cells and promote the synthesis of testosterone. Increased levels of T. feedback negatively at both the the pituitary and the hypothalamic levels, decreasing secretion of LH and GnRH.

Tamoxifene are anti-estrogens that exert their action by compting with estrogen for the estrogen receptors. They enhance gonadal function by reducing the negative feedback of estrogen at hypothalamic and pituitary levels resulting in increased GnRH activity, GnRH secretion produce T. and improved spermatogenesis.

Estradiol have a direct inhibitory effect on the leydig cell, decreasing the influence of estradiol act directly by decreasing the conversion of androgen to estradiol E2 through aromatase inhibition.

Table – 1 influence of indomethacin drugs on plasma FSH, LH and testosteron in oligospermic patients.

Hormones	Drugs/Doses Mg/day	Day 0	Day 30	Day 60	P
FSH Miu / ml	Indo. 2×25	15.0 ± 2.4	18.3 ± 1.9	25.7 ± 1.73	
	Indo. 3×25	13.2 ± 1.4	32.0 ± 2.1	38.4 ± 3.5	P<0.01

LH miu/ mml	Indo. 2×25	9.0 ± 0.8	14.1 ± 0.5	20.6 ± 1.2	
	Indo. 3×25	7.0 ± 5.6	24.6 ± 3.8	22.0 ± 1.8	
T ng / ml	Indo. 2×25	5.4 ± 0.27	3.3 ± 0.3	3.5 ± 0.45	
	Indo. 3×25	4.15 ± 0.3	2.35 ± 0.21	2.35 ± 0.21	

There was a significant differences $p<0.01$ after 60 days of treatment

Table -2 Effect of various doses of indomethacin on sperm count only.

Sperm count

In fertile patients	Drugs dose	Day o	Day 30	Day 60	Improvment percentage
Mild oligo	Indo. 2×25	15.4 ± 2.1	21.8 ± 3.3	25.2 ± 4.5	164%
Mild oligo	Indo. 3×25	17.2 ± 4.2	32.4 ± 3.9	37.5 ± 4.8	218%
Sever oligo	Indo. 2×25	14.3 ± 1.6	19.3 ± 2.6	9.8 ± 2.61	130%
Sever oligo	Indo. 3×25	14.9 ± 1.2	22 ± 2.7	25 ± 3.1	167%

Table -3 shows the improvement in sperm count in 20 patients of

Oligospermia

Drugs dose mg/day	Patients no.	Mild oligo.	Sever oligo.	Improvment percentage
Indo.	20	6	4	50%

2×25				
Indo. 3×25		6	4	70%

Table-4 pregnancies achieved by two doses of drugs for patients of oligospermica

Drugs dose mg/day	Patients no.	Mild oligo.	Sever oligo.	No . 0f pregnancy	P
Indo. 2×25	20	6	4	3	< 0.05
Indo. 3×25		6	4	4	< 0.01

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تاثير جرعتين من عقار indomethacin على حالتين للمرضى المصابين بندرة الحيامن

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الخلاصة:

في هذه الدراسة استخدمنا جرعتين من عقار indomethacin لحالتين من قلة الحيامن في الرجال (البسيط والشديد).

عشرون مريضاً كانوا يعانون منذ فترة طويلة من حالة العقم. ولهذا السبب كان تركيز الحيامن عندهم مليون أو أقل من ذلك.

المرضى في هذه الدراسة قسموا إلى مجموعتين- المجموعة الاولى استلمت 50 ملغم/ اليوم من العقار بينما المجموعة الثانية استلمت 70 ملغم/ اليوم ولكل حالة.

في كل الاحوال اخذت نماذج الدم لتحليل هرمون LH ، FSH و T قبل اعطاء العلاج وكذلك نماذج الحيامن اخذت من كل مريض للتحليل. وبعد 30 ، 40 ، 50 ، 60 يوم من العلاج فان العقار أثبت كفاءة في اعطاء فروقات معنوية لهرمونات gonadotrphin وتركيز الحيامن قبل وبعد العلاج وكذلك أثبت المرضى كفاءة في اخصاب زوجاتهم.

عقار indomethacin عمل على الخصية وسبب انخفاض في مستوى هرمون testosterone وعليه عمل على زيادة مستوى هرومن gonadotrphin لان هذا العقار عمل على hypothalamus-hypophysis axis مما سبب زيادة في مستوى هرمون FSH وكذلك عمل على الخصية مما سبب انخفاض في مستوى هرمون testosterone وبالمقابل زيادة في هرمون LH.

في هذه الدراسة وجدنا أن نسبة التحسين للمرضى المصابين بقلة الحيامن بين 50 -70% على عقار 50 ملغم و 75 ملغم/يومياً.

عقار indomethacin يعمل على كبح هرمون estrogen مما يسبب زيادة في خصوبة الرجال.