

Controlled Ovarian Stimulation with Urinary Gonadotrophins and Recombinant Gonadotrophins in Current Practice

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The main objective of the this study is to compare the effectiveness of ovarian stimulation with recombinant gonadotrophins (FSHr) versus urinary gonadotrophins (hMG) within the number of oocytes obtained and the number of embryos in the two patient groups, according to age groups and associated pathologies. The study design was retrospective, monocentric. All patients (71) who have addressed the In Vitro Fertilization Clinic of the Prof. Dr. Panait Sirbu Clinical Obstetrics and Gynecology Hospital during 01.01.2010 and 31.12.2010 were included in this research. The total number of oocytes (8.5 ± 3.9 vs 5.7 ± 3.9 , $p=0.045$), the number of fertilized oocytes (7.5 ± 3.6 versus 3.6 ± 2.8 $p=0.004$) and the number of embryos (6.6 ± 3.5 versus 3.7 ± 2.6 , $p=0.013$) were higher in women under 35 years of age treated with recombinant FSHr compared to women treated with urinary gonadotrophins hMG. Ovarian stimulation with recombinant gonadotrophins provides a greater number of oocytes and a greater number of embryos in all patients, regardless of age and associated pathology. There are many variables that can influence the success rate, but the first variable that can be controlled is the choice of FSHr in daily clinical practice.

Keywords: ovarian stimulation, gonadotrophins, embryos

Assisted Human Reproduction (ART) is a science that many practitioners compare with an art because the choice of stimulation protocols and drugs according to the particularity of each infertility case requires experience and a clinical sense, which are not found in standardized protocols. The therapeutic approach varies between clinics, and the choice of ovarian stimulation drugs often depends on the clinician's experience with a particular product, as well as the results previously obtained in similar cases. However, ovarian stimulation in IVF is extensively studied and improved, with the goal of obtaining standardized protocols to ease the work of clinicians and maximize the response to treatment in each population of patients.

Stimulation protocols differ through the initiation of stimulation and the drugs used for inhibition and stimulation. The main parameter that influences the clinician in choosing the ovarian stimulation protocol is patient's age. Age and ovarian reserve (assessed by AMH, serum anti Mullerian hormone or AFC - antral follicle count) cannot be changed [1-3] and are the only ones that provide an idea of the number of oocytes that could be harvested even before ovarian stimulation beginning. Starting from these two constants (age and ovarian reserve) that cannot be changed, each clinician chooses a stimulation protocol in favor of another, as well as the optimal dose of gonadotrophins for each patient [4-7].

Gonadotrophins have been used to treat infertility since the 1930's. The first preparations had animal origin, being followed by the appearance of human origin drugs (extracted from pituitary glands of human corpses). An important step forward was obtaining human menopausal gonadotrophins from the urine of postmenopausal women. Subsequently, highly purified urinary gonadotrophins produced by DNA technology appeared. Recombinant gonadotrophins are obtained by DNA technology using

culture on hamster ovarian tissue and are characterized by a high specificity and purity close to 100% [8,9].

Ovarian stimulation protocols and available medication

ART specialists may choose to use a gonadotropin releasing hormone (GnRH) agonist or a GnRH antagonist in order to suppress the LH (luteinizing hormone) peak. The treatment regimen may be started midway through the luteal phase, approximately one week after ovulation by administering a GnRH agonist, while gonadotropin stimulation may be started after confirmation of pituitary down regulation occurrence (long protocol) [10,11]. In case of short protocol, ovarian stimulation with gonadotrophins starts from day 2-3 of the menstrual cycle, and an agonist or GnRH antagonist can alternatively be used to prevent LH peak [12]. Substances used for stimulation are urinary or recombinant FSH, urinary or recombinant FSH and LH.

Until the appearance of GnRH antagonists, the long protocol was the most frequently used. Subsequently, because of the longer treatment duration, the higher doses of gonadotrophins required and the risk of hyperstimulation, the long protocol fell to second place in favor of the short GnRH antagonist protocol. Antagonist stimulation remains the first option for poor responders, primarily to avoid the suppressive effects that agonists have on follicular response and secondly to prevent premature LH peak, often seen in GnRH agonist alone stimulation [13].

Urinary hMG (human menopausal gonadotropin), derived from postmenopausal women's urine was for a long time the standard product used in controlled ovarian stimulation and ovulation induction. It contains both FSH (follicle stimulating hormone) and LH, but also other potentially biologically active urinary proteins. Some of the biological activity of LH in hMG is derived from hCG (human

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Gonadotrophins Iii Current Research

Karin Nielsen-Saines



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Androgens in Health and Disease Carrie Bagatell, William J. Bremner, 2003-05-27 Authoritative researchers and clinicians review our latest understanding of andrology in both basic science and clinical medicine Topics range from explaining the biology of androgens from several different perspectives to illuminating their role in the development and modulation of physiologic systems Authors demonstrate in a number of cases that testosterone can be a useful adjunct to the treatment of a variety of disease states Other chapters consider important topics such as androgens use in athletes the potential of androgens to improve physical function and quality of life in older men and androgens as potential male contraceptives

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Stojilkovic,Zvi Naor,2018-05-10 This eBook provides a comprehensive overview of our current knowledge on Gonadotropin releasing hormone receptor evolution structure signaling and functions Apart from review articles it comprises exciting new research as well as hypotheses and perspectives all of which are valuable in guiding our further research in this field

Index Medicus ,2004 Vols for 1963 include as pt 2 of the Jan issue Medical subject headings Gonadotropin Jorge Vizcarra,2013-02-20 This is a must have book for those interested in reproduction It provides a full account of our current knowledge of the hormones intimately associated with testicular and ovarian function Each chapter is carefully organized to cover basic concepts and recent advances in gonadotropin synthesis and secretion The information is presented in a sequence that provides researchers teachers and students with a logical integration of the reproductive axis Practical applications associated with reproductive management of domestic species are also provided Taken together this book is a comprehensive combination of fundamental endocrine concepts and original findings in the area of gonadotropin function

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of Pharmacochimistry Library comprises the text of invited lectures presented at the 11th Noordwijkerhout Camerino Symposium Trends in Drug Research held in Noordwijkerhout The Netherlands from 11-15 May 1997 In the programme attention has been given to the generation of new biological target systems and the generation of new lead molecules with presentations on e.g. combinatorial chemistry, compound libraries, database search, high throughput screening and molecular biology Other topics discussed were the perspectives for new medicines for the gastro intestinal tract, the major developments in the search for effective anti HIV drugs and new aspects in synthetic approaches In a special session three topics which currently draw much attention were discussed How to deal with the major problem of resistance against antimicrobial agents Can the apoptosis mechanism be used as a drug target Is the newly observed phenomenon of inverse agonism a general principle and has it consequences for drug development and use

Current Research on Pre-clinical Aspects of Cancer Therapy Current Cancer Research Project Analysis Center (U.S.), 1975 1038 references to research projects being conducted in the United States and elsewhere Entries arranged under 5 topics e.g. Preclinical studies of anticancer drugs Preclinical radiation therapy and Preclinical immunotherapy Entries include title, researcher address, contract number, summary and supporting agency Indexes by subjects, investigators, contractors, supporting agencies and contractor numbers

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Table of Contents Gonadotrophins Iii Current Research

1. Understanding the eBook Gonadotrophins Iii Current Research
 - The Rise of Digital Reading Gonadotrophins Iii Current Research
 - Advantages of eBooks Over Traditional Books
2. Identifying Gonadotrophins Iii Current Research
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Gonadotrophins Iii Current Research
 - User-Friendly Interface
4. Exploring eBook Recommendations from Gonadotrophins Iii Current Research
 - Personalized Recommendations
 - Gonadotrophins Iii Current Research User Reviews and Ratings
 - Gonadotrophins Iii Current Research and Bestseller Lists
5. Accessing Gonadotrophins Iii Current Research Free and Paid eBooks
 - Gonadotrophins Iii Current Research Public Domain eBooks

- Gonadotrophins Iii Current Research eBook Subscription Services
- Gonadotrophins Iii Current Research Budget-Friendly Options
- 6. Navigating Gonadotrophins Iii Current Research eBook Formats
 - ePub, PDF, MOBI, and More
 - Gonadotrophins Iii Current Research Compatibility with Devices
 - Gonadotrophins Iii Current Research Enhanced eBook Features
- 7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Gonadotrophins Iii Current Research
 - Highlighting and Note-Taking Gonadotrophins Iii Current Research
 - Interactive Elements Gonadotrophins Iii Current Research
- 8. Staying Engaged with Gonadotrophins Iii Current Research
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Gonadotrophins Iii Current Research
- 9. Balancing eBooks and Physical Books Gonadotrophins Iii Current Research
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Gonadotrophins Iii Current Research
- 10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
- 11. Cultivating a Reading Routine Gonadotrophins Iii Current Research
 - Setting Reading Goals Gonadotrophins Iii Current Research
 - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Gonadotrophins Iii Current Research
 - Fact-Checking eBook Content of Gonadotrophins Iii Current Research
 - Distinguishing Credible Sources
- 13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development
 - Exploring Educational eBooks

14. Embracing eBook Trends

- Integration of Multimedia Elements
- Interactive and Gamified eBooks

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