



生殖与避孕

SHENGZHI YU BIYUN

月刊 1980年12月创刊

2015年2月第35卷第2期

主管

国家卫生和计划生育委员会

主办

上海市计划生育科学研究所

协办

计划生育药具重点实验室

辉凌医药咨询(上海)有限公司

湖北葛店人福药业有限责任公司

主编

乔杰

编辑部主任

王黎茜

责任编辑

王黎茜

编辑出版

《生殖与避孕》编辑部

(上海老沪闵路779号, 200237)

电话: 021-64438169

传真: 021-64438975

E-mail: randc_journal@163.com

http://www.RandC.cn

印刷

上海竟成印务有限公司

广告经营许可证

3100420100002

国内总发行

上海市报刊发行处

国内订购

全国各地邮政局

国外发行

中国国际图书贸易公司

(北京399信箱)

报刊代号

4-294(国外代号: M389)

国内统一连续出版物号

CN31-1344/R

定价

每期20.00元

目次

临床指南

卵巢低反应专家共识.....武学清 孔蕊 田莉,等 (71)

实验研究

环境剂量的双酚A暴露对雄性小鼠生殖功能的影响.....
.....李玉华 周小羽 段斐,等 (80)

临床研究

达因-35对不同类型多囊卵巢综合征的疗效分析.....邓小艳 胡雅君 周海燕,等 (86)

宫腔灌注绒毛膜促性腺激素对反复着床失败后冻融胚胎移植妊娠结局的作
用.....文娅 李予 倪仁敏,等 (91)

子宫腔息肉对不孕患者内膜白血病抑制因子的影响.....
.....林坦 刘越 连亚婉,等 (95)

循证医学

基因重组促卵泡激素(FSH)与尿源性FSH用于体外受精-胚胎移植的Meta分
析.....叶虹 黄国宁 (99)

综述

胚胎干细胞与雌性生殖细胞互相转化的研究进展.....
.....赵婷婷 钱方波 熊芳,等 (109)

植入前胚胎非整倍体筛查的临床应用研究进展.....隋宜伦 孙晓溪 (114)

基于蛋白组学的子宫内膜容受性研究进展.....王静 王凤伟 徐键 (121)

持续性异位妊娠的诊治及预防进展.....杨志芹 黄学惠 (126)

临床报道

40例输精管道梗阻性无精子症诊疗策略分析.....李朋 张铁成 杨慎敏,等 (131)

经阴道超声诊断不孕症常见宫腔病变的分析——300例与宫腔镜检查结果的
比较.....张文燕 施晓波 (137)

会议通知..... (108)

专家风采..... (封二)



Contents

Directed by

National Health and Family Planning
Commission of PRC

Sponsored by

Shanghai Institute of Planned
Parenthood Research

Editor-in-Chief

Jie QIAO

Executive editor

Li-xi WANG

Editing

Editorial Board of *Reproduction
and Contraception* No.779, Lao-
humin Road, Shanghai 200237, China

Tel

+86-21-64438169

Fax

+86-21-64438975

E-mail

randc_journal@163.com

Website

<http://www.RandC.cn>

Printing

Shanghai Jingcheng Printing Co., Ltd.

Domestic Distribution

Shanghai Post Office

Domestic Subscription

Local Post Offices

Foreign Distribution

China International Book
Trading Corporation
(GUOJI SHUDIAN)

Postal Code

4-294(Foreign Code: M389)

CSSN

ISSN 0253-357X

CN 31-1344/R

CLINICAL GUIDELINE

A consensus of poor ovarian response.....*Xue-qing WU, Rui KONG, Li TIAN, et al.* (71)

LABORATORY STUDY

Effects of environmental doses of bisphenol A exposure on the reproduction of male mice.....*Yu-hua LI, Xiao-yu ZHOU, Fei DUAN, et al.* (80)

CLINICAL STUDY

Effect of Diane-35 on polycystic ovary syndrome of different subtypes
..... *Xiao-yan DENG, Ya-jun HU, Hai-yan ZHOU, et al.* (86)

Effects of intrauterine infusion of human chorionic gonadotropin (hCG) on the clinical outcome before frozen-thawed embryo transfer after repeated implantation failure *Ya WEN, Yu LI, Ren-min NI, et al.* (91)

Impact of endometrial polyps on endometrial leukemia inhibitory factor (LIF) among infertile patients.....*Tan LIN, Yue LIU, Ya-wan LIAN, et al.* (95)

EVIDENCE-BASED MEDICINE

Application of recombinant human FSH and urinary FSH in IVF-ET: a Meta analysis.....*Hong YE, Guo-ning HUANG* (99)

REVIEW

Progress in embryonic stem cells and female germ cells transformed with each other.....*Ting-ting ZHAO, Fang-bo QIAN, Fang XIONG, et al.* (109)

Advances in study on clinical application of pre-implantation genetic screening
..... *Yi-lun SUI, Xiao-xi SUN* (114)

Current progress in receptivity of endometrium based on proteomics.....
..... *Jing WANG, Feng-wei WANG, Jian XU* (121)

Progress in treatment and prevention of persistent ectopic pregnancy.....
..... *Zhi-qin YANG, Xue-hui HUANG* (126)

CLINICAL REPORT

Strategic analysis of treatment to 40 cases of vas deferens obstructive azoospermia
..... *Peng LI, Tie-cheng ZHANG, Shen-min YANG, et al.* (131)

Transvaginal ultrasound to diagnose pathological changes of infertility caused by intrauterine common analysis——300 cases compared with hysteroscopy examination results.....
..... *Wen-yan ZHANG, Xiao-bo SHI* (137)

• 临床指南 •

卵巢低反应专家共识

武学清 孔蕊 田莉 龚斐 胡琳莉 孙莹璞

陈新娜 朱依敏 胡燕军 孙伟 乔杰

(中华医学会生殖医学分会)

【摘要】卵巢低反应(POR)是卵巢对促性腺激素(Gn)刺激反应不良的病理状态。POR诊断标准满足以下3条中的2条即可:①高龄(≥ 40 岁)或存在卵巢反应不良的其它危险因素;②前次IVF周期卵巢低反应,常规方案获卵数 ≤ 3 个;③卵巢储备下降[窦卵泡数(AFC) $< 5\sim 7$ 个或抗苗勒管激素(AMH) $< 0.5\sim 1.1 \mu\text{g/L}$]。其病因主要与年龄、遗传和免疫因素、环境因素等有关。在IVF助孕中建议采用常规的GnRHa长方案、GnRHa短方案和GnRHA方案进行促排卵,也可采用非传统的微刺激方案、自然周期方案等方法。另外,使用生长激素(GH)、雄激素(A)、雌激素、口服避孕药(OC)等及中医中药来预处理有利于患者治疗结局的改善。

关键词: 卵巢低反应(POR); 控制性超促排卵(COH); 体外受精-胚胎移植(IVF-ET); 中医

中图分类号: R711.6

文献标识码: A

文章编号: 0253-357X(2015)02-0071-09

通讯作者: 乔杰; E-mail: jie.qiao@263.net

作者单位: 山西省妇幼保健院生殖医学中心(武学清); 北京大学人民医院(孔蕊, 田莉); 中南大学生殖与干细胞工程研究所(龚斐); 郑州大学第一附属医院生殖医学中心(胡琳莉, 孙莹璞); 北京大学第三医院(陈新娜, 乔杰); 浙江大学医学院附属妇产科医院(朱依敏, 胡燕军); 山东中医药大学第二附属医院(孙伟)

• 临床指南 •

A consensus of poor ovarian response

Xue-qing WU, Rui KONG, Li TIAN, Fei GONG, Lin-li HU, Ying-pu SUN,

Xin-na CHEN, Yi-min ZHU, Yan-jun HU, Wei SUN, Jie QIAO

(Society of Reproductive Medicine Study Groups of the Chinese Medical Association)

【ABSTRACT】 Poor ovarian response (POR) is the pathological state of ovarian stimulation. POR can be diagnosed when at least two of the following three features must be present: 1) advanced maternal age (aged over 40 years) or any other risk factor for POR; 2) a previous POR (oocytes retrieved less than or equal to 3 in conventional protocols); 3) an abnormal ovarian reserve test (ORT) [antral follicle count (AFC) <5-7 or anti-Müllerian hormone (AMH) <0.5-1.1 µg/L]. The causes of POR were mainly related with age, genetic factors, immune factors, and/or environmental factors. In IVF treatment, besides conventional GnRHa long and short protocols, and GnRHA protocols for ovarian stimulation, microstimulation, natural cycle scheme can be chosen. In addition, growth hormone (GH), androgen (A), estrogen, oral contraceptives (OC), and Chinese traditional medicine can be used in pretreatment which may improve the treatment outcomes.

Key words: poor ovarian response (POR); controlled ovarian hyperstimulation (COH); *in vitro* fertilization and embryo transfer (IVF-ET); Chinese traditional medicine

通讯作者: 乔杰; E-mail: jie.qiao@263.net

作者单位: 山西省妇幼保健院生殖医学中心(武学清); 北京大学人民医院(孔蕊, 田莉); 中南大学生殖与干细胞工程研究所(龚斐); 郑州大学第一附属医院生殖医学中心(胡琳莉, 孙莹璞); 北京大学第三医院(陈新娜, 乔杰); 浙江大学医学院附属妇产科医院(朱依敏, 胡燕军); 山东中医药大学第二附属医院(孙伟)

• 实验研究 •

环境剂量的双酚A暴露对雄性小鼠生殖功能的影响

李玉华^{1,2} 周小羽² 段斐² 杨芬² 潘鸿捷² 李扬¹ 李润生²

(1. 吉林大学白求恩医学院病理生理学教研室, 长春, 130021)

(2. 国家卫生与计划生育药具重点实验室, 上海市计划生育科学研究所, 上海, 200032)

【摘要】目的: 研究环境剂量的双酚A(BPA)暴露对雄性小鼠生殖功能的影响及可能的分子机制。方法: 84只3周龄C57BL/6J雄性小鼠按体质量随机分为3组, 分别为5 μg/kg BPA组、50 μg/kg BPA组、乙醇溶剂对照组, 每组28只。每日灌胃给药1次, 连续给药5周后, 检测生殖器官脏器指数、附睾尾精子数量、睾丸组织学形态; 同期与正常雌性小鼠配种检测雄鼠的生育力。应用MBD-qPCR方法检测睾丸中*Tnnt2*、*Tectb*基因的甲基化水平变化。结果: ① BPA暴露组与对照组间的生殖系统脏器指数无统计学差异($P>0.05$)。② 50 μg/kg BPA暴露组附睾尾精子数量下降20.1%; 睾丸曲细精管管腔中有生精细胞脱落等病理现象。③ BPA暴露组与对照组间的生育率无统计学差异($P>0.05$), 但50 μg/kg BPA暴露组每胎平均产仔数下降。④ BPA组睾丸中*Tnnt2*、*Tectb*基因的甲基化水平下降($P<0.01$)。结论: 环境剂量的BPA暴露对雄鼠生殖器官脏器指数没有影响, 50 μg/kg BPA能引起小鼠生精功能下降, 睾丸*Tnnt2*、*Tectb*基因的甲基化水平下降。

关键词: 双酚A (BPA); 生殖; DNA甲基化

中图分类号: R994.6

文献标识码: A

文章编号: 0253-357X(2015)02-0080-06

本课题为国家自然科学基金(基金编号: 81270760)和上海市自然科学基金(编号: 14ZR1435400)资助项目

通讯作者: 李润生; Tel: +86-21-64437446;

E-mail: runshengli2007@163.com

李扬; Tel: +86-431-85619485;

E-mail: lyang@jlu.edu.cn

Effects of environmental doses of bisphenol A exposure on the reproduction of male mice

Yu-hua LI^{1,2}, Xiao-yu ZHOU², Fei DUAN², Fen YANG²,
Hong-jie PAN¹, Yang LI¹, Run-sheng LI²

(1. Department of Pathophysiology, Norman Bathune College of Medical Sciences, Jilin University, Changchun, 130021)

(2. National Population and Family Planning Key Laboratory of Contraceptives Drugs & Devices, Shanghai Institute of Planned Parenthood Research, Shanghai, 200032)

【ABSTRACT】 Objective: To study the effects of bisphenol A (BPA) exposure at environmental doses on the reproduction of male mice and its mechanism. **Methods:** Eighty-four 3-week-old C57BL / 6J male mice were randomly divided into three groups: 5 µg/kg BPA group, 50 µg/kg BPA group and solvent control group, qd×5 weeks. Reproduction organ index, sperm count and testis histology were evaluated after gavage administration for 5 weeks. Male fertility index were further observed by mating with the normal female mice. Changes in the methylation levels of *Tnnt2*, *Tectb* gene were detected in testis using MBD-qPCR method. **Results:** 1) Reproduction organ index in BPA-treated groups and the control had no difference. 2) Epididymal sperm number was decreased by 20.1%, and spermatogenic cells were sloughed into the lumen of seminiferous tubules in 50 µg/kg BPA group. 3) There was no difference in male fertility index between BPA-exposure group and the control. Average pups per litter was decreased in 50 µg/kg BPA group. 4) Methylation level of *Tnnt2*, *Tectb* gene was declined in the testis of BPA group. **Conclusion:** BPA exposure at environmental doses had no effect on the reproduction organ index of male mice. BPA at 50 µg/kg dose can disrupt spermatogenesis of mice. BPA exposure can decrease the methylation level of *Tectb* and *Tnnt 2* gene in the testis.

Key words: bisphenol A (BPA); reproduction; DNA methylation

本课题为国家自然科学基金(基金编号: 81270760)和上海市自然科学基金(编号: 14ZR1435400)资助项目

通讯作者: 李润生; Tel: +86-21-64437446;

E-mail: runshengli2007@163.com

李扬; Tel: +86-431-85619485;

E-mail: lyang@jlu.edu.cn

· 临床研究 ·

达因-35对不同类型多囊卵巢综合征的疗效分析

邓小艳 胡雅君 周海燕 邓艳芹 李金丽

(武汉市第一医院妇产科, 武汉, 430022)

【摘要】目的: 探讨达因-35对不同类型多囊卵巢综合征(PCOS)血清激素及窦卵泡数等的影响。方法: 将138例PCOS患者按鹿特丹标准进行分型, 选择同期无高雄激素血症及月经紊乱的输卵管性不孕患者78例作为对照组。测定血清生殖激素及空腹胰岛素(FINS)等水平, 盆腔超声检测卵巢体积及窦卵泡计数, 经达因-35治疗3个周期后观察上述指标变化, 评价达因-35对不同类型PCOS的治疗效果。结果: A型[无排卵(O/A)+高雄激素(HA)+卵巢多囊(PCO)]、B型(O/A+PCO)、C型(HA+O/A)和D型(HA+PCO)分别为43例、73例、15例和7例。A型、C型和D型总睾酮(TT)和硫酸脱氢表雄酮(DHEAS)水平高于对照组, 各型LH、LH/FSH、FINS及胰岛素评价指数(HOMA-IR)高于对照组, 差异均有统计学意义($P<0.05$)。A型、B型和D型窦卵泡数多于C型及对照组, 差异有统计学意义($P<0.05$)。达因-35治疗3个周期后: A型、C型和D型血清TT降低, 差异有统计学意义($P<0.05$); DHEAS水平有所降低, 但差异无统计学意义($P>0.05$); 各型PCOS血清LH和LH/FSH下降, 窦卵泡数减少, 差异均有统计学意义($P<0.01$)。结论: 华中地区PCOS临床表现以A型和B型多见, 达因-35治疗3个周期可明显降低不同类型血清雄激素水平、血清LH水平和LH/FSH比值, 减少窦卵泡数。

关键词: 达因-35; 多囊卵巢综合征(PCOS); 分型; 雄激素; 窦卵泡计数

中图分类号: R711.59

文献标识码: A

文章编号: 0253-357X(2015)02-0086-05

本研究为武汉市科技局基金支助项目, 项目号: 201306230101
0815

通讯作者: 邓小艳; Tel: +86-15629116182;

E-mail: 37601350@qq.com

Effect of Diane-35 on polycystic ovary syndrome of different subtypes

Xiao-yan DENG, Ya-jun HU, Hai-yan ZHOU, Yan-qin DENG, Jin-li LI

(Department of Gynecology and Obstetrics, the First Hospital of Wuhan, Wuhan, 430022)

【ABSTRACT】 Objective: To explore the effect of Daine-35 on serum hormone and antral follicle count (AFC) of different subtypes of polycystic ovary syndrome (PCOS). **Methods:** A total of 138 cases of PCOS were recruited and typed according to Rotterdam diagnostic criteria, and 78 cases of tubal infertility without hyperandrogenism (HA) and menstrual disorders during the same period were collected as the control. Serum reproductive hormones including follicle-stimulating hormone (FSH), luteotropic hormone (LH), prolactin (PRL), estradiol (E₂), dehydroepiandrosterone (DHEAS), total testosterone (TT) and fast insulin (FINS) were determined by chemiluminescent immunoassay. Ovarian AFC was determined by ultrasonography. The effects of Daine -35 on above indexes were evaluated for different subtypes of PCOS after 3 cycles of treatment with Daine -35. **Results:** The number of the cases in type A and type B were 43 (31.2%) and 73 (52.9%), respectively. They were the most common clinical phenotypes of PCOS in the central region of China. TT and DHEAS levels of types A, C and D were higher than those of the control ($P<0.05$). The LH, LH/FSH, FINS and HOMA-IR levels in all types of PCOS were higher than those of the control ($P<0.05$). AFC of types A, B and D was more than that of type C and the control ($P<0.05$). After treatment with Daine-35 for 3 cycles, the serum TT levels of types A, C and D decreased significantly ($P<0.05$). DHEAS values also decreased, but with no significance ($P>0.05$). The serum LH level and LH/FSH as well as the AFC of all the PCOS types significantly decreased ($P<0.01$). **Conclusion:** Type A and type B are the most common clinical phenotypes of PCOS in the central region of China. Taking Daine-35 for 3 cycles can significantly reduce the serum androgen level, serum LH level, LH/FSH ratio, and AFC of different PCOS types.

Key words: Daine-35; polycystic ovary syndrome (PCOS); phenotype; androgen; antral follicle count (AFC)

本研究为武汉市科技局基金支助项目, 项目号: 201306230101
0815

通讯作者: 邓小艳; Tel: +86-15629116182;
E-mail: 37601350@qq.com

宫腔灌注绒毛膜促性腺激素对反复着床失败后 冻融胚胎移植妊娠结局的作用

文 娅 李 予 倪仁敏 杨冬梓 张清学

(广州中山大学孙逸仙纪念医院生殖中心, 广州, 510120)

【摘要】目的: 探讨胚胎反复着床失败(RIF)后冻融胚胎移植(FET)时行宫腔内灌注基因重组人绒毛膜促性腺激素(rhCG)对妊娠结局的影响。方法: 选择既往胚胎RIF再次行FET的208个周期的患者资料进行回顾性分析。将其中FET日宫腔内灌注rhCG为研究组, 另按1:1选择匹配(年龄、既往ET失败次数、不孕类型)对照组。分析比较着床率、自然流产率、生化妊娠率、临床妊娠率、多胎妊娠率。结果: 研究组着床率(22.92%)、生化妊娠率(5.77%)、自然流产率(17.78%)均略高于对照组(分别为16.88%、1.92%、16.13%), 多胎妊娠率略低于对照组(15.56% vs 19.35%), 但差异均无统计学意义($P>0.05$)。研究组和对照组均未观察到异位妊娠病例, 研究组临床妊娠率显著高于对照组(43.27% vs 29.82%), 差异有统计学意义($P<0.05$)。结论: FET日行宫腔内灌注rhCG可以提高RIF患者的临床妊娠率。

关键词: 体外受精 - 胚胎移植(IVF-ET); 冻融胚胎移植(FET); 反复种植失败(RIF); 临床妊娠率

中图分类号: R715.9

文献标识码: A

文章编号: 0253-357X(2015)02-0091-04

通讯作者: 张清学; Tel: +86-13602797433;

Fax: +86-20-81332333;

E-mail: zhangqingxue666@aliyun.com

Effects of intrauterine infusion of human chorionic gonadotropin (hCG) on the clinical outcome before frozen-thawed embryo transfer after repeated implantation failure

Ya WEN, Yu LI, Ren-min NI, Dong-zi YANG, Qin-xue ZHANG

(Reproductive Medicine Center of Sun Yat-sen Memorial Hospital, Guangzhou, 510120)

【ABSTRACT】 Objective: To investigate the effect of intrauterine infusion of recombinant human chorionic gonadotropin (rhCG) before frozen-thawed embryo transfer (FET) after repeated implantation failure (RIF). **Methods:** Retrospective analysis of 208 cycles from the patients who had RIF of embryo transfer undergoing FET was performed. The intervention group received an intrauterine infusion of hCG before the embryo transfer ($n=104$). The control group ($n=104$) matched to intervention group (the age difference < one year, failure times of embryo transfer matching, the same infertility type) did not receive rhCG. The implantation rates, the biochemical pregnancy rates, the first trimester abortion rates, the multiple pregnancy rates, and the clinical pregnancy rates were compared between the two groups. **Results:** The implantation rate (22.92%), the biochemical pregnancy rate (5.77%) and the first trimester abortion rate (17.78%) were higher in the hCG group than in the control (16.88%, 1.92%, 16.13%), the multiple pregnancy rate was lower in the hCG group than in the control (15.56% vs 19.35%), but these differences were not statistically significant. The clinical pregnancy rate was higher in the hCG group than in the control (43.27% vs 29.82%), the difference was statistically significant ($P<0.05$). **Conclusion:** Intrauterine administration of 500 U hCG before the embryo transfer can be a choice for patients undergoing FET after RIF. But more well-designed prospective randomized trials are needed.

Key words: *in vitro* fertilization and embryo transfer (IVF-ET); frozen-thawed embryo transfer (FET); repeated implantation failure (RIF); clinical pregnancy rate

通讯作者: 张清学; Tel: +86-13602797433;

Fax: +86-20-81332333;

E-mail: zhangqingxue666@aliyun.com

子宫腔息肉对不孕患者内膜 白血病抑制因子的影响

林坦¹ 刘越¹ 连亚婉² 吴青³

(1. 福建省立医院妇产科, 福建医科大学省立临床医学院, 福州, 350001)

(2. 福建省惠安县医院妇产科, 泉州, 362100)

(3. 复旦大学附属妇产科医院, 复旦大学上海医学院妇产科学系, 上海市女性生殖内分泌相关疾病重点实验室, 上海, 200011)

【摘要】目的: 探讨子宫内膜息肉(EP)对不孕症着床期内膜白血病抑制因子(LIF)转录和表达的影响, 初探其对内膜容受性的影响。方法: 冻融胚胎移植(FET)前宫腔镜检查的继发不孕患者35例, 其中术前彩色超声显示EP者为A组($n=25$), 未显示EP者为B组($n=10$)。于黄体中期行宫腔镜检查EP数目、大小、位置等, 并摘除息肉、刮取息肉周围子宫内膜及正常子宫腔内膜, 免疫组织化学方法检测LIF, RT-PCR检测LIF mRNA转录水平。结果: 患者一般情况及黄体中期雌、孕激素水平组间无统计学差异($P>0.05$); A组LIF mRNA转录水平及蛋白表达水平略高于B组, 但差异无统计学意义($P>0.05$)。结论: EP对内膜LIF的转录及表达无明显不利影响。

关键词: 子宫内膜息肉(EP); 白血病抑制因子(LIF); 容受性

中图分类号: R711.6

文献标识码: A

文章编号: 0253-357X(2015)02-0095-04

本课题为上海市女性生殖内分泌相关疾病重点实验室开放课题资助项目

通讯作者: 吴青; Tel: +86-591-88217022;

E-mail: okwq31@163.com

Impact of endometrial polyps on endometrial leukemia inhibitory factor (LIF) among infertile patients

Tan LIN¹, Yue LIU¹, Ya-wan LIAN², Qing WU³

(1. Department of Obstetrics & Gynecology, Fujian Provincial Hospital, Fujian Provincial Clinical Medical College, Fujian Medical University, Fuzhou, 350001)

(2. Department of Obstetrics & Gynecology, Fujian Huian Hospital, Quanzhou, 362100)

(3. Obstetrics and Gynecology Hospital, Fudan University, Department of Obstetrics and Gynecology of Shanghai Medical College, Fudan University, Shanghai Key Laboratory of Female Reproductive Endocrine Related Diseases, Shanghai, 200011)

【ABSTRACT】 Objective: To investigate the transcription and expression of leukemia inhibitory factor (LIF) among infertile patients suffered from endometrial polyps during implantation, discuss the impact of receptivity of endometrium affected by endometrial polyps (EP). **Methods:** Thirty-five secondary infertile patients were carried by hysteroscopy before frozen-thawed embryo transfer (FET). Twenty-five patients were found EP by ultrasonogram, while the other 10 patients were blank. The number, size and location of EP were evaluated by hysteroscopy in mid-luteal phase, and LIF was detected by immunohistochemistry and real-time polymerase chain reaction to compared the transcription and expression between the endometrium around the polyps and normal endometrium. **Results:** The common information, estradiol and progesterone were not different significantly. The group of EP had higher levels of expression and transcription of LIF without statistical significance. **Conclusion:** EP made no harmful impact to LIF of endometrium.

Key words: endometrial polyps (EP); leukemia inhibitory factor (LIF); receptivity

本课题为上海市女性生殖内分泌相关疾病重点实验室开放课题资助项目

通讯作者: 吴青; Tel: +86-591-88217022;

E-mail: okwq31@163.com

· 循证医学 ·

基因重组促卵泡激素(FSH)与尿源性FSH 用于体外受精-胚胎移植的Meta分析

叶虹 黄国宁

(重庆妇幼保健院, 重庆, 400010)

【摘要】目的: 比较体外受精(IVF)或卵胞质内单精子注射(ICSI)治疗周期基因重组促卵泡激素(rFSH)与尿源性促卵泡激素(uFSH)在控制性促排卵(COS)中的有效性。方法: 检索PubMed、EMBASE、Cochrane, CNKI及万方数据库中自rFSH上市至2013.09前发表的文章, 收集rFSH与uFSH在IVF或ICSI中应用的随机对照研究, 对纳入的研究进行质量评价, 提取数据, 采用RevMan 5.2软件对IVF或ICSI治疗周期的获卵数、FSH总用量、周期出生率、临床妊娠率、持续妊娠率、卵巢过度刺激综合征(OHSS)的相对有效性进行Meta分析。结果: 共纳入21篇研究, 6496个周期。总体上, rFSH较uFSH获卵数更多, FSH总用量更少, 差异有显著统计学意义; 周期出生率和临床妊娠率rFSH和uFSH之间无显著性差异。结论: rFSH较uFSH在辅助生殖中具有更好的COS有效性。

关键词: 基因重组促卵泡激素(rFSH); 尿源性促卵泡激素(uFSH); 体外受精(IVF); 卵胞质内单精子注射(ICSI); 生殖; Meta分析

中图分类号: R711.6

文献标识码: A

文章编号: 0253-357X(2015)02-0099-10

通讯作者: 叶虹; Tel: +86-13983180200; Fax: +86-23-63813374;
E-mail: yehongmed@163.com

Application of recombinant human FSH and urinary FSH in IVF-ET: a Meta analysis

Hong YE, Guo-ning HUANG

(Chongqing Health Center for Women and Children, Chongqing, 400010)

【ABSTRACT】 Objective: To evaluate the role and efficacy in controlled ovarian stimulation (COS) of recombinant FSH (rFSH) and urinary FSH (uFSH) during *in vitro* fertilization (IVF) and intracytoplasmic sperm injection (ICSI) therapy. **Methods:** Prospectively randomized controlled studies of the use of rFSH and uFSH in IVF and ICSI treatment were enrolled in this study from PubMed, EMBASE, Cochrane, CNKI and Data Base of Wanfang. After quality assessment and data extraction, Meta analysis was conducted under the assessment of odds ratio (OR) and mean difference (MD) by RevMan 5.2 software. **Results:** A total of 21 randomized controlled trial (RCT) studies were enrolled in this study after excluding poor quality and repeat published studies. The patients were further divided into 3 subgroups according to the types of uFSH. There was a significant difference in oocytes retrieved numbers between the two groups, rFSH was more effective [MD=1.40, 95% CI=0.79–2.02 (Z=4.46, P<0.000 01)]. There was a significant difference in FSH dosage between the two groups, rFSH needed less total dosage of FSH [MD=-222.56, 95% CI=-383.24– -61.88 (Z=2.71, P=0.007)]. There was no significant difference in the birth rate of cycle, clinical pregnancy rate. **Conclusions:** rFSH is more effective than uFSH in COS during assisting reproduction.

Key words: recombinant FSH (rFSH); urinary FSH (uFSH); *in vitro* fertilization (IVF);
intracytoplasmic sperm injection (ICSI); reproduction; Meta analysis

通讯作者: 叶虹; Tel: +86-13983180200; Fax: +86-23-63813374;
E-mail: yehongmed@163.com

• 综述 •

胚胎干细胞与雌性生殖细胞 互相转化的研究进展

赵婷婷 钱方波 熊芳 沈晔 郭凌岑 钱莉 董动丽 李晓燕

(无锡市妇幼保健院, 无锡, 214000)

【摘要】 胚胎干细胞是全能性的干细胞, 可以向3个胚层的细胞转化; 雌性生殖细胞也被认为是一种“干细胞”, 因为其将遗传信息从一代传至下一代。两者具有相同和不同的特殊标志物, 并且可以通过不同的方法互相转化, 为“胚胎干细胞-卵母细胞环路”提出设想。

关键词: 胚胎干细胞; 雌性生殖细胞; 体细胞核移植(SCNT); 孤雌激活(PA)

中图分类号: R321

文献标识码: A

文章编号: 0253-357X(2015)02-0109-05

通讯作者: 赵婷婷; Tel:+86-15716189322;
E-mail: zhaottwx@163.com

Progress in embryonic stem cells and female germ cells transformed with each other

Ting-ting ZHAO, Fang-bo QIAN, Fang XIONG, Ye SHEN, Ling-cen GUO,
Li QIAN, Dong-li DONG, Xiao-yan LI

(Maternal and Child Care Service Centre of Wuxi City, Wuxi, 214000)

【ABSTRACT】 Embryonic stem cells are totipotent stem cells which can be transformed into cells of the three germ layers. Female germ cells are also considered to be a kind of stem cell, because they transmit genetic information from one generation to the next. Both have the same and different special markers, and can be transformed into each other by various methods, and put forward for “Embryonic stem cell -Oocyte loop” ideas.

Key words: embryonic stem cell (ESC); female germ cell; somatic cell nuclear transfer (SCNT);
parthenogenetic activation (PA)

通讯作者: 赵婷婷; Tel:+86-15716189322;
E-mail: zhaottwx@163.com

植入前胚胎非整倍体筛查的临床应用研究进展

隋宜伦¹ 孙晓溪^{1,2,3}

(1. 复旦大学附属妇产科医院, 上海, 200011)

(2. 上海集爱遗传与不育诊疗中心, 上海, 200011)

(3. 上海市女性生殖内分泌相关疾病重点实验室, 上海, 200011)

【摘要】 研究证明基于囊胚期活检和全基因组分析技术的“第二代植入前遗传学筛查(PGS)”可以显著提高IVF治疗的临床结局。目前认为囊胚期活检是PGS活检的最佳时间,也是第二代PGS采用的活检方法。具体为通过单细胞全基因组扩增技术使样本达到可检测的量,再利用微阵列技术、高通量测序技术完成全基因组检测。除了技术方面的改进,第二代PGS还应在适用人群的选择方面综合考虑不孕者胚胎非整倍体的发生率和可用于移植的囊胚数2个方面,PGS的最适宜人群应该是排除了内膜因素的影响后其染色体异常发生率较高、同时可移植胚胎数较多者。

关键词: 植入前遗传学筛查(PGS); 第二代PGS; 胚胎活检; 全基因组检测

中图分类号: R321.1

文献标识码: A

文章编号: 0253-357X(2015)02-0114-07

通讯作者: 孙晓溪; Tel: +86-21-63456043;
E-mail: steven3019@hotmail.com

Advances in study on clinical application of pre-implantation genetic screening

Yi-lun SUI¹, Xiao-xi SUN^{1,2,3}

(1. *Obstetrics & Gynecology Hospital, Fudan University, Shanghai, 200011*)

(2. *Shanghai Jiai Genetics & IVF Institute, Shanghai, 200011*)

(3. *Shanghai Key Laboratory of Female Reproductive Endocrine Related Diseases, Shanghai, 200011*)

【ABSTRACT】 A series of studies have shown that the new generation of PGS (PGS#2), based on blastocyst biopsy followed by whole genome analysis, significantly improves the clinical outcome of IVF treatment. At present the blastocyst stage is the optimal time to perform biopsies for preimplantation genetic testing, and is adopted by PGS#2. Whole genome amplification of single cell is performed to obtain adequate embryo DNA, after which either array or next generation sequencing is employed for genetic screening. Besides the technical advances, the prevalence of aneuploidy and the number of transplantable blastocysts should also be taken into consideration when applying PGS#2. The most suitable population for PGS#2 should be women with endometrium factor ruled out, meanwhile with chromosome abnormalities in high prevalence and blastocyst transplantable in plenty.

Key words: preimplantation genetic screening (PGS); PGS#2; embryo biopsy; whole genome analysis

基于蛋白组学的子宫内膜容受性研究进展

王静 王凤伟 徐键

(浙江大学医学院附属妇产科医院, 杭州, 310006)

【摘要】 目前评价子宫内膜容受性手段很多, 但价值有限。蛋白组学作为一门高通量的新技术, 已经被很多学者用于筛查子宫内膜容受性的分子生物学标志。通过比较子宫内膜蛋白谱从增生期到分泌期、从种植前期到种植窗期动态变化过程, 学者们鉴定出了一系列与子宫内膜容受性相关的蛋白。内膜分泌蛋白组学作为一种崭新的无创性评估内膜容受性的方法, 在未来子宫内膜容受性标志分子筛选中具有强大的应用价值。

关键词: 子宫内膜容受性; 蛋白组学; 内膜活检组织; 分泌蛋白组学

中图分类号: R711.6

文献标识码: A

文章编号: 0253-357X(2015)02-0121-05

通讯作者: 徐键; Tel: +86-571-87061501; Fax: +86-571-87061878;
E-mail: xuj@zju.edu.cn

Current progress in receptivity of endometrium based on proteomics

Jing WANG, Feng-wei WANG, Jian XU

(*Women's Hospital, Zhejiang University School of Medicine, Hangzhou, 310006*)

【ABSTRACT】 There are plenty of means to evaluate endometrial receptivity at present, but of limited value. As a new high-throughput technology, proteomics has been used for screening the molecular marker of endometrial receptivity. A series of proteins related with endometrial receptivity have been identified by comparing the dynamic change of protein profiles from the proliferative phase to the secretory phase, and from the prereceptive phase to the receptive phase. As a new method to noninvasively evaluate endometrial receptivity, endometrial secretion proteomics has a powerful application value for screening the molecular marker of endometrial receptivity.

Key words: endometrial receptivity; proteomics; endometrial biopsy; secreted proteomics

通讯作者: 徐键; Tel: +86-571-87061501; Fax: +86-571-87061878;
E-mail: xuj@zju.edu.cn

持续性异位妊娠的诊治及预防进展

杨志芹 黄学惠

(昆明医科大学第一附属医院妇产科, 昆明, 650032)

【摘要】持续性异位妊娠是异位妊娠保守性手术后的并发症之一, 严重损害患者身心健康并造成经济负担。其发生与血hCG值、停经天数、包块大小、手术方法及术后hCG值的监测等多种因素有关。其治疗和预防方法也多种多样, 包括不予任何处理的期待治疗、以甲氨蝶呤(MTX)为主的药物保守治疗和手术治疗三种, 而手术治疗的路径又可分为腹腔镜或开腹手术。目前如何掌握好手术方法, 合理、适时应用药物, 减轻患者痛苦和费用仍是一个难题。

关键词: 持续性异位妊娠; 危险因素; 防治措施

中图分类号: R714.22

文献标识码: A

文章编号: 0253-357X(2015)02-0126-05

通讯作者: 杨志芹; Tel: +86-13608849354;
Fax: +86-871-65324888;
E-mail: 13608849354@163.com

Progress in treatment and prevention of persistent ectopic pregnancy

Zhi-qin YANG, Xue-hui HUANG

(The First Affiliated Hospital of Kunming Medical College of Obstetrics and Gynecology, Kunming, 650032)

【ABSTRACT】 Persistent ectopic pregnancy (PEP) is one of the complications of ectopic pregnancy after conservative treatment, which caused serious damage to patients' physical and mental health and caused economic burden. Its occurrence includes a variety of factors: serum hCG values, duration of menopause, mass size, surgical methods and postoperative monitoring of hCG values and so on. Its treatment and prevention methods are also diverse, how to grasp of the current surgical techniques deftly, reasonable and timely application of drugs to alleviate the suffering of patients and the cost is still a problem.

Key words: persistent ectopic pregnancy (PEP); risk factors; treatment and preventive measures

通讯作者: 杨志芹; Tel: +86-13608849354;
Fax: +86-871-65324888;
E-mail: 13608849354@163.com

• 临床报道 •

40例输精管道梗阻性无精子症诊疗策略分析

李朋^{1,2*} 张铁成^{1*} 杨慎敏¹ 江专新¹ 田汝辉¹ 刘宇飞¹

王俊龙¹ 智二磊¹ 孙璐¹ 陈向锋¹ 平萍¹ 李铮^{1,3}

(1. 上海交通大学医学院附属仁济医院泌尿外科, 上海市男科学研究所, 上海市人类精子库, 上海, 200127)

(2. 上海交通大学医学院附属仁济医院生殖医学中心, 上海市辅助生殖与优生重点实验室, 上海, 200135)

(3. 上海市生殖医学重点实验室, 上海, 200025)

【摘要】目的: 探讨输精管道梗阻性无精子症(OA)的诊疗策略。方法: 40例输精管道OA患者为研究对象。首先行输精管道探查, 根据术中探查情况进行输精管-输精管显微吻合术(VV)、输精管-附睾显微吻合术(VE)、交叉输精管-输精管吻合术、交叉输精管-附睾管显微吻合术或睾丸取精冻存术。结果: 精道探查后, 共行吻合手术26例, 取精+冻精手术14例。40例患者中, 共有3例患者失访(2例吻合患者, 1例冻精患者)。随访到的24例吻合术患者术后复通率为58.3%(14/24), 自然受孕率为29.1%(7/24)。随访到的13例取精+冻精患者中已有11例行ICSI/冻精助孕。结论: 输精管道OA, 可根据术前严格评估和术中探查行显微复通手术或取精术; 复通术后可获得自然妊娠的机会, 交叉显微吻合为输精管道复通的有效途径之一。

关键词: 梗阻性无精子症(OA); 输精管-输精管吻合术(VV); 输精管-附睾吻合术(VE); 取精; 冻精

中图分类号: R691.2

文献标识码: A

文章编号: 0253-357X(2015)02-0131-06

本课题为上海市市级医院适宜技术项目(SHDC12014263)

通讯作者: 李铮; Tel: +86-13564783816;

E-mail: lizhengboshi@163.com

*: 为共同第一作者

Strategic analysis of treatment to 40 cases of vas deferens obstructive azoospermia

Peng LI^{1,2*}, Tie-cheng ZHANG^{1*}, Shen-min YANG¹, Zhuan-xin JIANG¹,
Ru-hui TIAN¹, Yu-fei LIU¹, Jun-long WANG¹, Er-lei ZHI¹,
Lu SUN¹, Xiang-feng CHEN¹, Ping PING¹, Zheng LI^{1,3}

(1. Department of Urology Renji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai Human Sperm Bank, Shanghai, 200127)

(2. Shanghai Key Laboratory for Assisted Reproduction and Reproductive Genetics, Center for Reproductive Medicine, Renji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai, 200135)

(3. Shanghai Key Laboratory for Reproductive Medicine, Shanghai, 200025)

*: Equally contributed to the research

【ABSTRACT】 Objective: To investigate the strategy of operation treatment to vas deferens obstructive azoospermia (OA). **Methods:** There were totally 40 vas deferens OA patients received microsurgical treatments. Various patients were preformed vasovasostomy (VV), vastoepidystomy (VE), transsceptal crossover VV, transsceptal crossover VE or microdissection of testicular sperm extraction (MD-TESE) with cryopreserved. **Results:** Among the 40 patients, 26 patients were performed VV or VE, 14 were performed MD-TESE with sperm cryopreserved, and 3 patients were lost to follow-up. In 26 patients undergone VV or VE, the patent rate was 58.3% (14/24), the natural pregnant rate was 29.1% (7/24). In 13 patients who undergone MD-TESE with sperm cryopreserved, 11 couples got pregnant by ICSI using frozen sperm collected at operation. **Conclusion:** The microsurgery techniques in vas deferens OA treatments have an obvious advantage, especially the chance for achieving natural pregnancy, so it has the value of promotion. The transsceptal crossover VE or VE should be considered for some patients.

Key words: obstruction azoospermia (OA); vasovasostomy (VV); vasoepididymostomy (VE); sperm retrieval; sperm cryopreserved

本课题为上海市市级医院适宜技术项目(SHDC12014263)

通讯作者: 李铮; Tel: +86-13564783816;

E-mail: lizhengboshi@163.com

*: 为共同第一作者

经阴道超声诊断不孕症常见宫腔病变的分析 ——300例与宫腔镜检查结果的比较

张文燕¹ 施晓波²

(1. 中信湘雅生殖与遗传专科医院, 长沙, 410000)

(2. 中南大学湘雅附二医院, 长沙, 410011)

【摘要】目的: 探讨经阴道超声检查不孕症患者常见宫腔内疾病的发生率准确性。方法: 分析300例同时接受阴道超声及宫腔镜检查的不孕症患者常见宫腔内病变, 比较2种方法的各项指标。结果: 所占比例最高的宫腔内病变为子宫内膜息肉, 其次为宫腔粘连、宫腔畸形, 最低的是子宫内膜结核; 对各种常见宫腔内病变的诊断, 2种检查方法符合率比较无统计学差异($P>0.05$)。结论: 阴道超声在诊断不孕症患者中最常见的宫腔内病变是子宫内膜息肉、宫腔粘连、宫腔畸形, 黏膜下肌瘤、内膜结核较少见; 子宫内膜息肉、宫腔粘连中各项指标均高, 最有利于开展临床工作; 对诊断子宫异常增生、慢性非特异性子宫内膜炎, 宫腔镜可以定位取材, 明显优于阴道超声。

关键词: 阴道超声; 宫腔镜; 宫腔内病变

中图分类号: R713.4

文献标识码: A

文章编号: 0253-357X(2015)02-0137-04

通讯作者: 施晓波; Tel: +86-731-85295153; Fax: +86-731-85533525;
E-mail: shixiaobo8848@aliyun.com

Transvaginal ultrasound to diagnose pathological changes of infertility caused by intrauterine common analysis —— 300 cases compared with hysteroscopy examination results

Wen-yan ZHANG¹, Xiao-bo SHI²

(1. Reproductive & Genetic Hospital of Citic-xiangya, Changsha, 410000)

(2. The Second Xiangya Hospital of Central South University, Changsha, 410011)

【ABSTRACT】 Objective: To investigate the incidence of uterine infertility patients with common diseases by transvaginal ultrasound. **Methods:** The common intrauterine lesions in 300 infertility patients accepted transvaginal ultrasound and hysteroscopy were analyzed, the indicators of the two methods were compared. **Results:** The incidence of endometrial polyps was the highest in intrauterine lesions, followed by intrauterine adhesions, and uterine malformations, while the incidence of endometrial tuberculosis was the lowest; there was no statistically significant difference in diagnostic accuracy between the two methods. **Conclusion:** The most common infertility intrauterine lesions are endometrial polyps, followed by intrauterine adhesions, uterine malformations, submucosal fibroids, endometrial tuberculosis is rare. Indicators detected by transvaginal ultrasound in the diagnosis of endometrial polyps and intrauterine adhesions are high, which are conducive to carry out clinical work. For diagnosing abnormal uterine hyperplasia, chronic nonspecific endometritis, hysteroscopy can locate subjects, and is significantly better than the vaginal ultrasound.

Key words: transvaginal ultrasound; hysteroscopy; intrauterine lesions

通讯作者: 施晓波; Tel: +86-731-85295153; Fax: +86-731-85533525;
E-mail: shixiaobo8848@aliyun.com