

• 实验研究 •

正己烷对卵巢颗粒细胞雌激素合成的影响及其机制

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【摘要】 目的: 探讨正己烷对生殖内分泌的干扰作用及其机制。方法: 48只成年雌性 Wistar 大鼠按体质量随机分成4组, 染毒剂量分别为: 0 g/m³、3.01 g/m³、9.03 g/m³、27.1 g/m³。4 h/d 静式吸入染毒, 每周6 d, 持续6周。染毒结束后, 提取卵巢颗粒细胞进行体外培养, 观察不同剂量组正己烷染毒后大鼠卵巢颗粒细胞培养液中 E₂ 的变化, 实时荧光定量PCR法检测 *P450arom* mRNA 的表达水平。结果: 各剂量组大鼠动情周期呈明显缩短趋势, 其中高剂量组(27.1 g/m³)大鼠动情期、动情间期明显缩短, 与对照组比较, 差异有统计学意义($P < 0.05$)。体内染毒可抑制各剂量组卵巢颗粒细胞体外分泌 E₂ 水平, 且 *P450arom* mRNA 的表达强度均低于对照组($P < 0.05$)。结论: 正己烷具有明显的雌性生殖内分泌干扰作用, 可通过影响卵巢颗粒细胞雌激素合成过程中 *P450arom* 的表达, 进而干扰雌激素的合成。这可能是正己烷生殖内分泌干扰作用的重要机制之一。

关键词: 正己烷; 卵巢; 颗粒细胞; 雌激素

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Effects of n-Hexane on the Estrogen Synthesis in Ovaries Granule Cell

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【ABSTRACT】 Objective: To study the effects of n-hexane on the estrogen synthesis and the expressions of *P450arom* mRNA, in order to explore the mechanism of female reproductive endocrine disruption of n-hexane. **Methods:** Adult female Wistar rats were randomly assigned to four groups based on weight. N-hexane was given absorption 4 h/d, 6 d/week for 6 weeks at doses of 0 g/m³, 3.01 g/m³, 9.03 g/m³, 27.1 g/m³. The rats were killed and the ovaries granule cells were took out and incubated. The E₂ of ovaries granule cells were measured by the ratio immunoassays. The expressions of *P450arom* mRNA were determinated with real-time fluorescence quantitative PCR. **Results:** The period of estrus stages in rats of N-hexane absoltion groups decreased than that of the control, the period of estrus and metestrus decreased significantly in the 27.1 g/m³ group compared with the control. As the concentration of N-hexane was increased, E₂ levels and the expression of *P450arom* mRNA were significantly declined ($P<0.05$). **Conclusion:** N-hexane has obvious female reproductive endocrine disruption. The change in the expression of *P450arom* mRNA in the E₂ synthesis of ovaries has been shown, which is considered as important mechanism of endocrine disruption.

Key words: N-hexane; ovaries; granule cell; estrogen (E₂)

受精卵细胞质晕与胚胎发育潜能 及临床妊娠结局的关系

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【摘要】 目的: 分析受精卵细胞质晕(halo)用于胚胎发育潜能评价、妊娠结局预测的意义。方法: 统计分析IVF原核期2PN受精卵halo出现率与胚胎早期卵裂率、移植前胚胎分级、临床妊娠率和着床率的关系。结果: 出现与未出现halo胚胎, 早期卵裂及细胞碎片情况无统计学差异; 出现halo的胚胎, 优质胚胎形成率显著高于未出现halo的胚胎; 以出现halo、早分裂的优质胚胎为指标选择移植胚胎组的临床妊娠率及着床率高于单以优质胚胎、出现早分裂或出现halo为指标选择的移植胚胎组。比较C型和P型halo的早期卵裂率、细胞碎片率、优质胚胎率、临床妊娠率及着床率, 差异均无统计学意义。结论: 受精卵halo的出现对胚胎发育潜能有一定的预示作用, 可以为移植胚胎的选择提供参考。

关键词: 细胞质晕(halo); 早期卵裂; 优质胚胎; 胚胎发育潜能; 妊娠率

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Relationships between the Zygote Cytoplasmic Halo in Embryonic Developmental Potential and Clinical Pregnancy Outcomes

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【ABSTRACT】 Objective: To identify the significance of using zygote halo for evaluation of embryonic developmental potential and prediction of clinical pregnancy outcomes. **Methods:** The relationships of pronuclear 2PN zygote occurrence rates of cytoplasmic halo and the early cleavage rate, embryo grading before planting, the clinical pregnancy rate, the implantation rate were analyzed. **Results:** By comparing the early cleavage and cell fragments between the embryo with halo and without halo, there was no significantly statistical difference. The good-quality embryo rate of the embryo with halo was much higher than that of the embryo without halo, which was statistically different. The clinical pregnancy rate and the implantation rate of selecting embryo transplantation with indicator of appearing halo, early cleavage and good-quality embryo were higher than those that only use the good-quality embryo, early cleavage and halo as an indicator. There was no significant difference between C type and P type halo in the early cleavage rate, the cell fragments, the good-quality embryo rate, the clinical pregnancy rate and the implantation rate. **Conclusion:** The appearance of zygote cytoplasmic halo indicates the potential of embryonic development, which could be a reference when to choose the embryo for transplantation.

Key words: cytoplasmic halo; early cleavage; good-quality embryo; embryonic developmental potential; pregnancy rates

HOXA10 和 *HOXA11* 基因在子宫内膜异位 不孕症患者分泌期子宫内膜组织 的表达及意义

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【摘要】 目的: 探讨 *HOXA10* 和 *HOXA11* 基因对子宫内膜异位(endometriosis, EMs)不孕症患者内膜组织容受性的影响。方法: 应用荧光定量RT-PCR和蛋白印迹法分别检测EMs不孕症患者($n=23$, EMs组)和具有正常生育能力女性($n=20$, 对照组)分泌期子宫内膜组织中*HOXA10*和*HOXA11* mRNA及蛋白的表达水平。结果: *HOXA10*和*HOXA11*基因在EMs组和对照组分泌期子宫内膜中均有表达。EMs组*HOXA10*和*HOXA11* mRNA和蛋白的表达显著低于对照组($P<0.05$)。结论: EMs不孕症组子宫内膜组织中*HOXA10*和*HOXA11*基因的表达水平显著下调, 提示EMs可能通过影响子宫内膜组织中*HOXA10*和*HOXA11*基因的正常表达而干扰子宫内膜容受性的形成, 从而导致胚胎着床失败和不孕。

关键词: 子宫内膜异位症(EMs); 不孕症; *HOXA10*; *HOXA11*; 子宫内膜

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Expression of *HOXA10* and *HOXA11* Gene in Endometrial Tissues at Secretory Phase of Women with Endometriosis-associated Infertility

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【ABSTRACT】 Objective: To investigate the clinical significance for endometrial receptivity of *HOXA10* and *HOXA11* gene in the infertility patients of endometriosis (EMs). **Methods:** The mRNA and protein expression levels of *HOXA10* and *HOXA11* in secretory phase tissues of EMs-associated infertility group ($n=23$, EMs group) and healthy women group ($n=20$, control group) were detected by FQ-PCR and Western blotting. **Results:** *HOXA10* and *HOXA11* genes were expressed in the two groups. The expression levels of *HOXA10* mRNA and protein were lower in EMs group than those in the control ($P<0.01$). The expression levels of *HOXA11* mRNA and protein in EMs group were also lower than those in the control ($P<0.05$). **Conclusion:** The expression of gene *HOXA10* and *HOXA11* on both nucleic acid and protein levels are lower in infertile EMs patients than in the control. The lower expression of gene *HOXA10* and *HOXA11* may be involved in the infertility of EMs patients by reducing endometrial receptivity which cause embryo implantation failure.

Key words: endometriosis (EMs); infertility; *HOXA10*; *HOXA11*; endometrium

原因不明复发性流产患者外周血中Th1/Th2型细胞因子水平的研究

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【摘要】目的: 探讨原因不明复发性流产(URSA)患者再次妊娠时不同妊娠结局与外周血中Th1/Th2型细胞因子水平的变化规律。方法: 采用酶联免疫吸附法检测: ① 33例URSA患者、32例正常妊娠及78例正常未孕妇女外周血IL-2、IL-10、IFN- γ 、IL-4、IL-6的水平; ② 回顾性分析23例URSA患者再次正常妊娠前、后外周血IL-2、IL-10、IFN- γ 、IL-4、IL-6水平的变化; ③ URSA患者随访中, 44例再次正常妊娠与16例妊娠后再次流产的外周血IL-2、IL-10、IFN- γ 、IL-4、IL-6水平的比较。结果: ① 与正常妊娠组及正常未孕组相比, URSA组外周血中Th1型细胞因子IL-2、IFN- γ 的水平升高($P < 0.05$), Th2型细胞因子IL-10、IL-4、IL-6的水平降低($P < 0.05$); ② URSA患者再次正常妊娠前、后自身对照比较结果显示, Th1型细胞因子IL-2、IFN- γ 外周血水平在同一URSA患者妊娠阶段有明显下降($P < 0.05$), 而Th2型细胞因子IL-4则有明显上升($P < 0.05$); ③ 在URSA患者再次妊娠后, 再次流产组Th1型细胞因子IL-2、IFN- γ 外周血水平较继续妊娠组高($P < 0.05$), Th2型细胞因子IL-10、IL-4外周血水平较继续妊娠组低($P < 0.05$)。结论: URSA患者Th1型细胞因子升高, Th2型细胞因子降低, 而URSA患者再次正常妊娠时Th1型细胞因子降低, Th2型细胞因子升高。外周血中Th1/Th2细胞因子的变化与妊娠结局相关。

关键词: 原因不明复发性流产(URSA); Th1型细胞因子; Th2型细胞因子; IL-2; IL-10; IFN- γ ; IL-4; IL-6

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Study on the Serum Levels of Th1/Th2 Cytokines of Patients with Unexplained Recurrent Spontaneous Abortion

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【ABSTRACT】 Objective: To investigate the serum levels of Th1/Th2 cytokines of patients with unexplained recurrent spontaneous abortion (URSA), and the variation of different pregnancy outcomes. **Methods:** Enzyme-linked immunosorbent assay was used to detect serum levels of Th1/Th2 cytokines: 1) the serum levels of IL-2, IL-10, IFN- γ , IL-4, IL-6 in URSA group ($n=33$), normal pregnancy group ($n=32$) and normal unpregnancy group ($n=78$); 2) the serum levels of IL-2, IL-10, IFN- γ , IL-4, IL-6 in URSA patients with normal pregnancy group; 3) the serum levels of IL-2, IL-10, IFN- γ , IL-4, IL-6 of URSA patients with different pregnancy results. **Results:** 1) Compared with normal pregnancy group and normal unpregnancy group, the serum levels of IL-2, IFN- γ of URSA group were significantly higher ($P<0.05$). The serum levels of IL-10, IL-4 and IL-6 of URSA group were slightly lower ($P<0.05$). 2) URSA patients with normal pregnancy paired comparison results indicated that the serum levels of IL-2 and IFN- γ of the stage of pregnancy decreased significantly ($P<0.05$), the serum levels of IL-4 was significantly increased ($P<0.05$). 3) URSA patients with different pregnancy outcomes showed that the serum levels of IL-2 and IFN- γ of normal pregnancy group were significantly lower than those of the abortion group ($P<0.05$). The serum levels of IL-10 and IL-4 of normal pregnancy group were slightly higher ($P<0.05$). **Conclusion:** In patients with URSA, Th1 type cytokines elevated, Th2 type cytokines decreased, and when URSA patients got normally pregnant again, Th1 cytokines decreased, Th2 type cytokine increased. The change of Th1/Th2 cytokines in peripheral blood is related to pregnancy outcome.

Key words: unexplained recurrent spontaneous abortion (URSA); Th1 type cytokines; Th2 type cytokines; IL-2; IL-10; IFN- γ ; IL-4; IL-6

• 临床研究 •

慢卵裂非优质胚胎冻融移植结局研究

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【摘要】 目的: 研究体外受精中慢卵裂非优质胚胎冻融后的发育潜能及临床应用价值。方法: 对行冷冻胚胎解冻的 875 个周期进行回顾性分析, 根据卵裂球分裂程度将胚胎分为 A 组(卵裂球分裂速度正常, 即冷冻前有 ≥ 1 枚胚胎卵裂球数 ≥ 6 个)和 B 组(卵裂球分裂速度慢, 卵裂球数 4~5 个), A 组胚胎均在移植当天解冻, 培养 1~3 h 后移植。B 组胚胎在移植前 1 d 解冻, 培养 18~24 h 后依据生长情况再分成 3 个亚组: 胚胎全部生长组(B1 组), 即培养 18~24 h 后胚胎全部生长, 卵裂球数在 6~9 个之间; 部分胚胎生长组(B2 组), 即 ≥ 1 枚胚胎生长且卵裂球数 ≥ 6 - 细胞; 胚胎未生长组(B3 组), 即复苏后所有胚胎均没有继续生长分裂。比较各亚组间胚胎复苏率、卵裂球全部完整复苏率、临床妊娠率、种植率和流产率的差异。结果: 875 个冷冻胚胎中 A 组 617 个周期, 成功解冻 612 个周期, 解冻复苏后移植, 临床妊娠 295 例(48.46%), 种植率为 29.32%。B 组 258 个周期, 成功解冻 255 个周期, 其中 B1 组 167 个周期, B2 组 52 个周期, B3 组 36 个周期, B1、B2 均进行了移植, 临床妊娠率分别为 28.74%(48/167)和 25.00%(13/52), B1、B2 组间差异无统计学意义($P > 0.05$), B3 组中 12 例因患者要求进行了移植, 11 例种植失败, 1 例仅生化妊娠, 临床妊娠率为 0%; B 组种植率为 23.29%。B 组冻融后临床妊娠率(27.85%)和种植率均低于 A 组($P < 0.05$), 但两者在胚胎复苏率、卵裂球全部完整复苏率、流产率等方面无统计学差异($P > 0.05$)。结论: 第 3 日形态正常但发育缓慢的胚胎(细胞数 < 6 个)仍具有临床应用价值, 冻融后培养 18~24 h 有利于鉴别胚胎的发育潜能, 对于冻融后培养 18~24 h 未继续卵裂者不建议进行移植。

关键词: 慢卵裂胚胎; 复苏率; 继续卵裂; 临床妊娠率

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Study on Transfer Outcome of Frozen-thawed Slow-cleaving Embryos

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【ABSTRACT】 Objective: To investigate the further developmental potentiation and the value of clinical utility of frozen-thawed slow-cleaving embryos from *in vitro* fertility. **Methods:** A retrospective analysis was performed in our centre on 875 frozen-thawed embryo transfer (FET) cycles. All of 875 FET cycles were divided into two study groups according to their cell number before freezing: normal cleaving group (group A, 6–9 cells), at least including one embryo which has ≥ 6 cells, and slow cleaving group (group B, 4–5 cells), all the embryos have 4–5 cells. In group A embryo transfer was done on the day of thawing with 1–3 h *in-vitro* culture. Slow-cleaving embryos were thawed the day before transfer with 18–24 h of post-thaw culture. According to whether or not resumption of mitosis during post-thaw culture, the embryos were allocated to three subgroups: cleaved embryo group which all embryos were further cleavage (group B1), at least one embryo had cleaved and another had not cleaved (group B2), and non-cleaved embryo group (group B3). Blastomere survival rate, fully intact blastomeres rate (100% blastomere survival), clinical pregnancy rate, implantation rate and abortion rate were compared among the groups. **Results:** A total of 612 cycles of group A with at least one embryo survival resulted in 295 cycles (48.20%) clinical pregnancies. The implantation rate was 29.32% of group A. Totally 255 thawing cycles (group B) comprised 167 cycles with further cleavage, resulting in 48 cycles (28.74%) clinical pregnancies, 52 mixed cycles with at least one cleaved embryo, resulting in 13 cycles (25.00%) clinical pregnancies, and 36 cycles with non-cleaved embryo group, depending on resumption of mitosis after 18–24 h post-thaw culture. The clinical pregnancy rate did not differ significantly between cleaved embryo group and partially cleaved embryo group (28.74% vs 25.00%, $P>0.05$). Twelve out of 36 cycles with non-cleaved embryos were transferred, leading to 0 cycle clinical pregnancy. The implantation rate of group B was 23.29%. The clinical pregnancy rate and the implantation rate were significantly higher in the normal cleaving embryo group than in the slow-cleaving embryo group (48.20% vs 26.41%, $P<0.01$ and 29.32% vs 23.29%, $P<0.05$), but the blastomere survival rate, the fully intact blastomeres rate and the abortion rate were similar between the normal cleaving embryo group and the slow-cleaving embryo group. **Conclusion:** D 3 slow-cleaving embryos with normal morphology (<6 cells) could be cryopreserve for future use. 18–24 h post-thaw culture for the slow-cleaving embryos may provide a better selection of the embryos based on further cleavage, and thereby increase the embryo utilization rate and cumulative clinical pregnancy rate.

Key words: slow-cleaving embryos; blastomeres survival; further cleavage; clinical pregnancy rate

口服避孕药预处理在PCOS患者 行拮抗剂方案中的效果

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【摘要】 目的: 探讨口服避孕药(OCP)预处理在行IVF/ICSI中多囊卵巢综合征(PCOS)患者行拮抗剂方案中的效果。方法: 回顾性分析行拮抗剂方案IVF/ICSI的92名PCOS患者的临床资料, 按有无OCP预处理分为OCP+拮抗剂组(A组)和直接拮抗剂组(B组), 比较A、B组患者的一般情况、促排卵情况和临床结局。结果: 患者的一般情况、Gn使用天数、思则凯使用天数和使用量、受精率、卵裂率、可用胚胎率和优质胚胎率组间均无统计学差异($P>0.05$)。A组总Gn使用量、获卵数略低于B组, A组临床妊娠率高于B组, 但差异均无统计学意义($P>0.05$)。B组发生1例中度卵巢过度刺激综合征(OHSS)。结论: PCOS患者拮抗剂方案促排卵前行OCP预处理有减少总Gn使用量、获卵数和提高临床妊娠率的趋势。

关键词: 多囊卵巢综合征(PCOS); 拮抗剂方案; 口服避孕药(OCP)

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Effect of Oral Contraceptive Pill Pre-treatment before GnRH Antagonist Protocol in PCOS Patients Undergoing Controlled Hyperstimulation

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【ABSTRACT】 Objective: To compare the clinical outcomes between gonadotropin-releasing hormone (GnRH) antagonist in polycystic ovarian syndrome (PCOS) patients undergoing controlled hyperstimulation with or without oral contraceptive pill (OCP) pre-treatment. **Methods:** The clinical data of 92 PCOS patients undergoing GnRH antagonist protocol were retrospectively analyzed. According to whether the patient did or not use OCP pre-treatment, 92 PCOS cycles were divided into OCP+GnRH antagonist group (group A, 51 cycles) and GnRH antagonist group (group B, 41 cycles). **Results:** Baseline characteristics, the fertilization rate, the cleavage rate, the viability embryo rate, the good-quality embryo rate, the duration of stimulation, total days and dosage of cetrotide injected were similar between the two groups. The total gonadotropin used and the number of oocytes retrieved were lower and the clinical pregnancy rate was higher in group A compared with group B, but the differences were not statistically significant. There was one patient who happened moderate OHSS in group B. **Conclusion:** Using OCP pre-treatment might have the trend that it can reduce the total gonadotropin used and the number of oocytes retrieved and improve clinical pregnancy rate in PCOS patients undergoing GnRH antagonist protocol.

Key words: polycystic ovary syndrome (PCOS); GnRH-antagonist protocol; oral contraceptive pill (OCP)

供卵冻融胚胎移植结局的影响因素分析

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【摘要】目的: 探讨卵巢早衰(POF)、卵巢功能低下、染色体异常、反复胚胎种植失败患者在辅助生殖助孕过程中行供卵冻融胚胎移植(FET)的临床疗效。方法: 在本院行供卵FET的91个周期为研究组, 选择同期常规FET的1278个周期为对照组, 对其妊娠结局进行比较。结果: 研究组患者平均移植胚胎数、种植率低于对照组, 其中平均移植胚胎数差异有统计学意义($P < 0.05$); 但研究组患者临床妊娠率略高于对照组, 且研究组各年龄段的临床妊娠率均略高于对照组, 其中 ≤ 30 岁研究组患者临床妊娠率与对照组相比较, 差异有统计学意义($P < 0.05$)。研究组各年龄组间胚胎种植率、临床妊娠率、流产率、异位妊娠率以及抱婴回家率均无统计学差异; 对照组随年龄的增加胚胎种植率、临床妊娠率以及抱婴回家率呈下降趋势, 且各年龄组间差异有统计学意义($P < 0.05$)。研究组中自然周期移植与人工周期相比较, 平均移植胚胎数、胚胎种植率、临床妊娠率、流产率、异位妊娠率以及抱婴回家率之间差异均无统计学意义($P > 0.05$)。结论: 供卵FET是治疗POF、遗传性疾病等不能生育健康子代妇女的有效方法; 自然周期、激素替代周期均可使种植率和妊娠率达到同样良好的结局。

关键词: 卵巢早衰(POF); 冻融胚胎移植(FET); 体外受精-胚胎移植(IVF-ET); 妊娠结局

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Analysis of Factors Influencing Pregnancy Results of Oocyte-donation Frozen-thawed Embryo Transfer

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【ABSTRACT】 Objective: To analyse the clinical application value of oocyte-donation frozen-thawed embryo transfer (FET) in patients with premature ovarian failure (POF), decreasing ovarian store (DOS), genetic factors or multiple assisted reproductive technologies failure. **Methods:** The pregnancy outcome was observed in 91 cycles performed oocyte-donation FET, with comparison of 1 278 cycles performed with own-oocyte FET as the controls. **Results:** The age of female patient and duration of infertility in the oocyte-donation FET group were notable higher than those of the own-oocyte FET group, but there was no significant difference in the pregnancy rate, the miscarriage rate and the ectopic pregnancy rate between the two groups ($P>0.05$). In the oocyte-donation FET group, the implantation rate, the pregnancy rate, the miscarriage rate and the taking baby home rate were not different among different ages, while in own-oocyte FET group the implantation rate, the pregnancy rate and taking baby home rate were falling significantly with the growing of female age ($P<0.05$). The implantation rate and pregnancy rate in oocyte-donation FET group were higher than those in own-oocyte FET group, and the implantation rate in ≤ 30 -year old group in oocyte-donation FET group was significantly higher. No difference was found between natural cycle and artificial cycle in implantation rate, the pregnancy rate and the miscarriage rate in oocyte-donation FET group. **Conclusion:** Oocyte-donation IVF-ET is an effective way to help the infertile women with POF and/or genetic diseases. Both natural cycle and artificial cycle could have better pregnancy outcomes.

Key words: premature ovarian failure (POF); oocyte-donation frozen-thawed embryo transfer (FET); IVF-ET; pregnancy outcome

改良长方案致卵巢低反应发生率及其助孕结局

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【摘要】 目的: 探讨改良长方案的临床应用价值。方法: 回顾性分析行 IVF/ICSI-ET 助孕治疗的改良长方案 752 个取卵周期, 并以常规长方案 538 个取卵周期为对照, 比较移植周期的一般资料和临床结局, 分析改良长方案的卵巢低反应发生率及其助孕治疗结局。结果: 改良长方案的妊娠率、种植率、活产率高, 流产率低, 与常规长方案组相比有显著统计学差异($P < 0.05$); 比较卵巢低反应周期, 2 种方案的卵巢低反应发生率无统计学差异($P > 0.05$); 改良长方案的低反应组 Gn 使用剂量大, 使用时间长, 但获卵数、移植周期取消率、流产率与常规长方案无统计学差异, 而妊娠率、种植率、活产率均高于长方案, 差异有显著统计学意义($P < 0.05$)。结论: 与常规长方案相比, 改良长方案卵巢低反应发生率无明显增高, 临床结局优于常规长方案。

关键词: GnRH-a; 改良长方案; IVF/ICSI-ET; 卵巢低反应

中图分类号: R711.6

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Reproductive Outcome of Patients Encountering Poor Ovarian Response in Modified Long Down-regulation Protocol

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【ABSTRACT】 Objective: To explore the clinical application value of modified long down-regulation protocol. **Methods:** A retrospective study was performed on patients receiving IVF-ET. A total of 752 cycles using modified long down-regulation protocol and 538 cycles using long down-regulation protocol were included. General characteristics and clinical outcomes of the patients using two protocols were compared. Meanwhile, basic conditions and outcome of the two protocols were also compared. The cycles encountering poor ovarian response were compared in the two protocols to evaluate the rate of ovarian low response and the outcomes of poor response cycles in modified long protocol. **Results:** The clinical pregnancy rate, the implantation rate and the live birth rate per embryo transfer in modified long down-regulation protocol were significantly higher and the abortion rate was significantly poorer than those in long down-regulation protocol ($P < 0.05$). There was no significant difference in the rate of poor ovarian response between the two protocols. When focusing on the patients encountering poor ovarian response, the dosage of Gn used was higher and the duration of Gn stimulation was longer in modified long down-regulation protocol, however, there was no significant difference in the number of oocytes retrieved, the rate of cancelled cycles and the abortion rate between the two groups. The pregnancy rate, the implantation rate and the live birth rate per embryo transfer in poor ovarian response patients were significantly higher in modified long down-regulation protocol than in long down-regulation protocol. **Conclusion:** In comparison with conventional long protocol, the rate of poor ovarian response occurred was not significantly increased and clinical outcomes were significantly improved in modified long protocol.

Key words: GnRH-a; modified long protocol; IVF/ICSI-ET; poor ovarian response

• 循证医学 •

腹腔镜与开腹行子宫肌瘤挖除术 随机对照研究的Meta分析

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【摘要】目的: 评价腹腔镜子宫肌瘤挖除术(laparoscopic myomectomy, LM)与开腹子宫肌瘤挖除术(open myomectomy, OM)治疗子宫肌瘤的手术效果、安全性及远期结果。方法: 计算机检索PubMed、EMbase、Ovid、Cochrane library、循证医学数据库、中国生物医学文献数据库、CNKI、万方数字化期刊全文数据库至2012年8月的文献, 收集2种术式的随机对照试验(randomized controlled trial, RCT)。用RevMan 5.1.7软件进行Meta分析。结果: 最终纳入7个RCT研究(8篇文献), 656例患者, 其中LM组328例, OM组328例。Meta分析的结果显示: ①手术时间: $OR=12.02$, $95\%CI=8.45\sim 15.59$, $P<0.000\ 01$; ②术中失血量: $OR=-47.20$, $95\%CI=-60.79\sim -33.61$, $P<0.000\ 01$; ③手术中总的并发症: $OR=3.73$, $95\%CI=0.61\sim 22.98$, $P=0.16$; ④手术中严重并发症: $OR=3.02$, $95\%CI=0.31\sim 29.39$, $P=0.34$; ⑤术后排气恢复时间: $OR=-15.14$, $95\%CI=-19.05\sim -11.23$, $P<0.000\ 01$; ⑥术后血红蛋白值变化: $OR=-1.04$, $95\%CI=-1.14\sim -0.93$, $P<0.000\ 01$; ⑦手术后总并发症: $OR=0.41$, $95\%CI=0.22\sim 0.77$, $P=0.005$; ⑧手术后严重并发症: $OR=0.45$, $95\%CI=0.10\sim 2.00$, $P=0.29$; ⑨手术后妊娠结局, 妊娠率: $OR=1.32$, $95\%CI=0.80\sim 2.17$, $P=0.28$; 流产率: $OR=1.24$, $95\%CI=0.45\sim 3.37$, $P=0.68$; 剖宫产率: $OR=0.93$, $95\%CI=0.39\sim 2.18$, $P=0.86$; 经阴道分娩率: $OR=1.08$, $95\%CI=0.46\sim 2.53$, $P=0.86$; 早产率: $OR=0.67$, $95\%CI=0.10\sim 4.28$, $P=0.67$; ⑩手术后子宫肌瘤复发情况: $OR=1.15$, $95\%CI=0.60\sim 2.18$, $P=0.67$ 。结论: 2种术式比较, 腹腔镜组手术时间、术中失血量、术后排气恢复时间、术后血红蛋白值变化等方面有优势。且术后总的并发症较开腹组低, 但术中总并发症、术中严重并发症、术后严重并发症、术后妊娠结局、术后子宫肌瘤复发等方面2种术式没有明显差异。

关键词: 子宫肌瘤; 腹腔镜手术; 开腹手术; 随机对照研究; Meta分析

中图分类号: R713.4

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Laparoscopic Myomectomy Versus Open Myomectomy for Uterine Myomas —— A Meta-analysis of Randomized Controlled Trials

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【ABSTRACT】 Objective: To determine the efficacy and safety and long-term outcomes of the removal of uterine fibroids in women by laparoscopic myomectomy (LM) or open myomectomy (OM). **Methods:** Literature from 1980 to 2012 were searched from PubMed, Embase, Ovid Cochrane Library, Evidence-Based Medicine Reviews, Chinese biomedical literature database, CNKI, Wanfang medical network and Chinese science and Technology Periodical Full-text Database. Randomized controlled trials (RCT) of the two operation methods were also searched. The Meta-analyses were performed using RevMan 5.1.7 software. **Results:** There were 7 randomized controlled trials were included, of which 328 patients were in the LM group and the other 328 patients were in the OM group. The results of Meta-analysis showed that, 1) operation time: $OR=12.02$, $95\%CI=8.45\sim 15.59$, $P<0.000\ 01$; 2) blood loss: $OR=-47.20$, $95\%CI=-60.79\sim -33.61$, $P<0.000\ 01$; 3) overall complications of intraoperative complications: $OR=3.73$, $95\%CI=0.61\sim 22.98$, $P=0.16$; 4) serious complications of intraoperative: $OR=3.02$, $95\%CI=0.31\sim 29.39$, $P=0.34$; 5) postoperative ileus: $OR=-15.14$, $95\%CI=-19.05\sim -11.23$, $P<0.000\ 01$; 6) the dropping of hemoglobin: $OR=-1.04$, $95\%CI=-1.14\sim -0.93$, $P<0.000\ 01$; 7) overall complications of postoperative: $OR=0.41$, $95\%CI=0.22\sim 0.77$, $P=0.005$; 8) serious complications of postoperative: $OR=0.45$, $95\%CI=0.10\sim 2.00$, $P=0.29$; 9) pregnancy outcome, pregnancy rate: $OR=1.32$, $95\%CI=0.80\sim 2.17$, $P=0.28$; miscarriage rate: $OR=1.24$, $95\%CI=0.45\sim 3.37$, $P=0.68$; the rate of cesarean section: $OR=0.93$, $95\%CI=0.39\sim 2.18$, $P=0.86$; vaginal delivery rate: $OR=1.08$, $95\%CI=0.46\sim 2.53$, $P=0.86$; the rate of preterm birth: $OR=0.67$, $95\%CI=0.10\sim 4.28$, $P=0.67$; 10) recurrence rate: $OR=1.15$, $95\%CI=0.60\sim 2.18$, $P=0.67$. **Conclusion:** LM had an advantage in operation time, blood loss, postoperative ileus, and the dropping of hemoglobin. Total complications of postoperative were fewer in LM. There were no differences in intraoperative complications, serious complications of intraoperative, serious complications of postoperative, pregnancy outcome and recurrence.

Key words: uterine myoma; laparoscopic myomectomy (LM); open myomectomy (OM); randomized controlled trials; Meta-analysis

• 综述 •

Galectin-3在胚胎着床中作用的研究进展

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【摘要】 Galectin-3 是半乳糖凝集素家族中的一员, 广泛分布于不同的细胞和组织中。Galectin-3 能通过与细胞内、外的不同蛋白间特殊的结合参与细胞黏附、增殖、免疫调节、凋亡和肿瘤的发生、发展等一系列生理、病理过程。而在生殖领域的研究中发现 Galectin-3 在着床窗口期高表达, 以及在此期间激素通过调节 Galectin-3 及其配体的表达来建立和维持成功的妊娠; 另一方面 Galectin-3 又可调节子宫内膜细胞的增殖和黏附, 从而影响胚胎着床的成功。

关键词: Galectin-3; 子宫内膜; 胚胎着床

中图分类号: R339.2⁺

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Research Progress of Galectin-3 Biological Function in Embryo Implantation

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【ABSTRACT】 Galectin-3 as one member of the lectins family is widely spread among different types of cells and tissues. Through specific interactions with a variety of intra- and extracellular proteins, Galectin-3 affects numerous biological processes and seems to be involved in different physiological and pathophysiological conditions, such as cell-cell adhesion, proliferation, immune reactions, apoptosis and neoplastic development. The researches in reproduction area found the high expression of Galectin-3 mediated by female hormonal during embryo implantation, which promotes and maintains a successful pregnancy. Meanwhile, Galectin-3 regulates the proliferation and adhesion of endometrial cells to affect embryo implantation.

Key words: Galectin-3; endometrium; embryo implantation

宫内营养不良与成年后心血管疾病发生风险

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【摘要】 宫内营养不良与成年后心血管疾病关系密切。研究显示宫内营养不良可通过干扰胎儿糖、脂代谢、激素水平、重要脏器的发育和功能、调控基因的表达及其表观遗传修饰等多种途径导致胎儿的低出生体质量与物质代谢的改变, 增加成年后心血管疾病的发生风险。辅助生殖技术干扰了配子的自然受精过程, 改变了胚胎的生长环境, 可增加子代出生低体质量的发生率, 也存在诱发成年后心血管疾病发生的风险。

关键词: 宫内营养不良; 心血管疾病; 低出生体质量儿; 表观遗传; 辅助生殖技术(ART)

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Impact of Intrauterine Malnutrition on Cardiovascular Disease Risks after Adult

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【ABSTRACT】 Intrauterine malnutrition is closely associated with adult cardiovascular diseases. Reports have showed that intrauterine malnutrition changed the metabolisms of fetal glucose and lipids, hormone levels, development and functions of organs, gene expression and epigenetic modifications, leading to low birth weight (LBW) and changes of increasing the risks of cardiovascular diseases in adult. Moreover, assisted reproductive technology (ART) interferes the natural process of gamete fertilization, alters the environments of embryo growth, elevates the incidence of LBW, which might also increases the risk of cardiovascular diseases in adult.

Key words: intrauterine malnutrition; cardiovascular disease; low birth weight (LBW); epigenetics; assisted reproductive technology (ART)

女性产后性功能障碍及其影响因素

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【摘要】 女性产后普遍存在性健康问题, 包括性欲障碍(减低)、性高潮障碍及性交痛等。目前研究显示, 女性产后性功能障碍受多种因素影响, 如: 分娩方式、激素水平、神经因素、心理因素、躯体疾病及药物等。寻找引起产后性功能障碍的高危因素加以干预是改善女性产后性健康状况的重要措施。本文就女性产后性功能障碍的发生情况及其影响因素的研究现状作一综述。

关键词: 性功能障碍(FSD); 产后; 影响因素

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Female Sexual Dysfunction in Postpartum Period and Its Influencing Factors

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【ABSTRACT】 Female sexual problems in postpartum period is common, including sexual desire disorder (or reduce), sexual orgasmic disorder and sexual pain during intercourse. The current studys have shown that female sexual dysfunction after delivery could be influenced by many factors, such as mode of delivery, hormone level, neural factors, psychological factors, physical diseases and drugs. Searching for the risk factors which could cause sexual dysfunction in postpartum period and intervening them is an important measure to improve female health status. This review will focus on the present situation and influencing factors of female sexual dysfunction in postpartum period.

Key words: sexual dysfunction; postpartum; influencing factors

• 技术交流 •

聚乙烯输卵管节育栓的生物学实验研究

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【摘要】目的: 检测聚乙烯输卵管节育栓的生物学性能。方法: 对聚乙烯输卵管节育栓进行细胞毒性实验、阴道刺激实验、迟发型超敏实验、植入实验及遗传毒性试验(Ames 试验)。结果: 聚乙烯输卵管节育栓的细胞毒性试验显示细胞相对增殖度为1级; 阴道刺激指数为0; 迟发型超敏反应等级为0级; 输卵管栓植入3个月后, 植入的局部反应无明显异常; 输卵管栓遗传毒性 Ames 试验检测结果为阴性。结论: 聚乙烯输卵管节育栓各项生物学性能指标符合节育栓注册标准, 具有可靠的生物安全性。

关键词: 聚乙烯; 输卵管; 节育栓; 生物性能

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Biological Study of Polyethylene Oviduct Contraceptive Plug

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【ABSTRACT】 Objective: To test the biological properties of polyethylene oviduct contraceptive plug. **Methods:** Cytotoxicity test, vaginal irritation test, delayed-type hypersensitivity test, implantation test and genotoxicity Ames test were performed for polyethylene oviduct contraceptive plug. **Results:** Biological tests of polyethylene oviduct contraceptive plug showed that cell relative growth rate in cytotoxicity test was grade 1, and vaginal irritation index was 0, and delayed-type hypersensitivity test was grade 0. There was no abnormal reaction in the implanted location at 3 months after the implantation. Ames test was negative. **Conclusion:** Biological properties of polyethylene oviduct contraceptive plug meet the registered criteria, and polyethylene oviduct contraceptive plug shows reliable biosecurity.

Key words: polyethylene; oviduct; contraceptive plug; biological properties