

• 实验研究 •

HPV58型E1重组蛋白的表达纯化 及其多克隆抗体的制备

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【摘要】 目的: 原核表达重组人类乳头瘤病毒(human papillomavirus, HPV)58型E1蛋白, 并制备兔抗HPV58型E1蛋白多克隆抗体。方法: 分别构建含编码E1蛋白分子中1~326 aa (E1-N)的cDNA片段的表达质粒pET-28b-E1-N, 以及含编码E1蛋白分子中319~644 aa (E1-C) cDNA片段的表达质粒pET-28b-E1-C原核表达载体, 分别转化感受态BL21(DE3)细胞, 经诱导表达后, 利用镍柱亲和层析方法, 分离纯化目的蛋白E1-N和E1-C作为免疫原免疫新西兰大白兔, 制备抗E1多克隆抗体, Western blotting检测抗体的特异性。结果: 制备获得高纯度的E1-N和E1-C蛋白, 以及高滴度的兔抗E1多克隆抗体, Western blotting结果示, 制备的多克隆抗体具有较好的抗原特异性。结论: 成功获得兔抗HPV58型E1蛋白多克隆抗体, 为E1蛋白分子中线性B细胞表位的鉴定提供了物质基础。

关键词: HPV58型E1重组蛋白; 蛋白表达; 包涵体纯化; 抗体制备

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Expression and Purification of HPV58 E1 Protein and Preparation of Polyclonal Antibodies against HPV 58 E1 Protein

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【ABSTRACT】 Objective: To express and purify human papillomavirus (HPV) 58 E1 protein and to obtain rabbit polyclonal antibodies against HPV58 E1 protein. **Methods:** pET-28b-E1-N and pET-28b-E1-C vectors were constructed and transformed into BL21(DE3) competent cells. Target proteins were expressed after IPTG induction and purified through Ni affinity chromatography and then used as antigens to immunize New Zealand rabbits to obtain polyclonal antibodies. **Results:** Highly purified target proteins were obtained and Western blotting results showed that the prepared polyclonal antibodies had high specificity to HPV58 E1 protein. **Conclusion:** The polyclonal antibodies against HPV58 E1 protein were obtained successfully, which is helpful for further research on identification of linear B-cell epitopes of HPV58 E1 protein.

Key words: HPV58 E1 recombinant protein; protein expression; inclusion body purification; preparation of polyclonal antibodies

卵巢皮质组织厚度在人卵巢组织异种移植兔模型中对移植效果的影响

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【摘要】 目的: 研究不同厚度的卵巢组织移植物对人卵巢组织异种移植效果的影响。方法: 将妇科手术中取得的人新鲜卵巢皮质组织切割成不同厚度的组织片, 并根据厚度分为A组(2 mm × 2 mm × 2 mm)和B组(2 mm × 2 mm × 1 mm)。然后将卵巢组织移入去势4周的兔背肌中, 构建人卵巢组织异种移植兔模型, 每兔移植8片, 每组5只动物, 移植后6周回收。采用放射性免疫分析法测兔血清雌二醇(E₂)含量, HE染色观察移植组织显微镜下形态, CD31染色计数新生血管数, TUNEL标记移植回收卵巢组织凋亡细胞。结果: E₂水平B组恢复较快, 在移植后的第1、2、4、5周B组较同一时间的A组升高更显著($P < 0.05$); B组卵巢组织回收率(91.7%)稍高于A组(86.7%), HE染色B组的卵巢基质保存完整, 纤维化率低于A组; B组的平均新生血管数(17.7 ± 5.8 条)较A组(6.3 ± 2.9 条)明显升高($P < 0.01$), B组中TUNEL染色阳性细胞率明显低于A组($13.45 \pm 5.50\%$ vs $45.31 \pm 9.29\%$, $P < 0.01$)。结论: 移植物厚度对卵巢移植后的效果有明显影响, 厚1 mm的小组组织片在人新鲜卵巢组织异种移植兔模型中较为适合。

关键词: 人卵巢组织移植; 异种移植; 移植物厚度; 移植血供; 兔

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Effects of Graft Thickness on Xenotransplantation of Human Ovarian Tissue in Rabbit Model

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【ABSTRACT】 Objective: To investigate the effect of graft thickness on xenotransplantation of human ovarian tissue. **Methods:** Fresh human ovarian tissue from patients was divided into two parts (two groups), group A: one part of tissue was cut into strips of 2 mm × 2 mm × 2 mm, group B: another part of tissue was cut into strips of 2 mm × 2 mm × 1 mm. Then they were transplanted into the back muscle of rabbits until 6 weeks after transplantation. The E₂ level in the rabbit serum was analyzed by radioimmunoassay, histological morphology was observed by HE staining under microscope, new vessels were detected by CD31 immunohistochemical staining and apoptotic cells were detected by TUNEL assay. **Results:** The E₂ level in group B rose faster and higher than that in group A at week 1, 2, 4, 5 after transplantation ($P < 0.05$), the recovery rate in group B (91.7%) was higher than that in group A (86.7%), group B had better ovarian stroma and less fibrosis. The average number of new vessels in group B was significantly higher than that in group A (17.7 ± 5.8 vs 6.3 ± 2.9 ; $P < 0.01$), and the percentage of TUNEL positive-staining cells in group B was significantly lower than that in group A ($13.45 \pm 5.50\%$ vs $45.31 \pm 9.29\%$; $P < 0.01$). **Conclusion:** The thickness of grafts has a great effect on human ovarian tissue xenograft, 1 mm thickness is suitable for the rabbit xenograft model.

Key words: human ovarian tissue graft transplantation; heterologous; graft thickness; graft blood supply; rabbit

• 临床研究 •

补肾益气方影响人早孕绒毛滋养细胞分泌功能的研究

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【摘要】目的: 探讨补肾益气方调控人早孕母-胎界面内分泌免疫网络的机制。方法: 收集正常孕6~8周行人工流产术后的绒毛, 体外分离、培养人早孕绒毛滋养细胞。运用血清药理学方法, 分别以体积分数10%和20%补肾益气方含药血清(分别为中药低剂量组和高剂量组)处理细胞24 h、36 h、48 h, 同时设立体积分数10%及20%对照组血清和空白对照组, ELISA法测定细胞培养上清液中白介素-10(IL-10)、干扰素- γ (IFN- γ)分泌水平, 电化学发光免疫分析法测定孕酮(P)水平。结果: 24 h起, 中药低、高剂量组IL-10水平高于血清对照组及空白对照组($P<0.05$); 并且48 h时, 中药高剂量组IL-10浓度高于低剂量组($P<0.01$)。IFN- γ 水平中药组与血清对照组相近($P>0.05$)。24 h起, 中药低剂量组和高剂量组的孕酮(P)水平均高于各对照组 ($P<0.01$), 并且中药高剂量组高于中药低剂量组($P<0.05$)。结论: 补肾益气方含药血清以剂量-时间依赖方式促进人早孕滋养细胞的IL-10、P分泌, 可能是其调节内分泌免疫网络的作用机制之一。

关键词: 补肾益气方; 含药血清; 滋养细胞; 孕酮(P); 白介素-10(IL-10); 干扰素- γ (IFN- γ)

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Effect of Kidney-replenishing Herb on the Secretion of Human Trophoblasts

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【ABSTRACT】 Objective: To explore the mechanism of kidney-replenishing herb regulating endocrine-immune network at the maternal-fetal interface during human first-trimester. **Methods:** The trophoblasts were isolated from human villus by trypsin digestion and cultured *in vitro*, then the trophoblasts were stimulated by 10% and 20% kidney-replenishing herb for 24 h, 36 h and 48 h, respectively. Each exposure group was matched to control group with same concentration serum. The concentrations of interleukin-10 (IL-10), interferon- γ (IFN- γ) and progesterone (P) in the culture medium were detected by ELISA and electrochemiluminescence immunoassay. **Results:** The secretion level of IL-10 stimulated by 10% and 20% kidney-replenishing herb for 24–48 h increased significantly compared with those of serum control group ($P < 0.05$), and the level of IL-10 stimulated by 20% kidney-replenishing herb for 48 h increased significantly compared with that of 10% kidney-replenishing herb ($P < 0.01$). The IFN- γ level induced by kidney-replenishing herb was similar as that of serum control group ($P > 0.05$). The secretion level of P treated with 10% and 20% kidney-replenishing herb for 24–48 h increased significantly compared with that of serum control group ($P < 0.01$), and P level stimulated by 20% kidney-replenishing herb for 48 h increased significantly compared with that stimulated by 10% kidney-replenishing herb ($P < 0.05$). **Conclusion:** Kidney-replenishing herb improves the secretion of IL-10 and P produced by trophoblasts in a time- and concentration-dependent manner, which may be the mechanism of kidney-replenishing herb regulating endocrine-immune network at the maternal-fetal interface.

Key words: kidney-replenishing herb; medicated serum; trophoblast; progesterone (P); interleukin-10 (IL-10); interferon- γ (IFN- γ)

中药疏肝化瘀方对子宫内膜异位症患者卵巢 颗粒细胞 GDF-9 的影响

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【摘要】目的: 探讨疏肝化瘀中药对子宫内膜异位症(EMs)患者卵泡液颗粒细胞生长分化因子-9 (GDF-9)的影响。方法: 将40例因EMs行体外受精-胚胎移植(IVF-ET)的患者随机分为中药+控制性超促排卵组(A组, $n=20$)和单纯性控制性超促排卵组(B组, $n=20$); 另选择同期因输卵管因素行IVF-ET的患者为正常对照组(C组, $n=20$)。应用Western blotting法检测卵巢颗粒细胞中GDF-9的表达; 并比较3组间的妊娠结局。结果: B组比C组促卵泡激素(FSH)用量明显增加, 而获卵数、受精率、优质胚胎率及妊娠率明显降低; A组和B组颗粒细胞中GDF-9的表达低于C组($P<0.01$); A组较B组FSH用量减少($P<0.0001$), 获卵数、受精率、优质胚胎率及妊娠率明显增加($P<0.01$); A组颗粒细胞中GDF-9的相对表达量(0.56 ± 0.12)显著高于B组(0.21 ± 0.09)($P<0.05$)。结论: EMs患者颗粒细胞中GDF-9的表达水平低于正常孕龄妇女, 疏肝化瘀中药可以提高EMs患者GDF-9的表达水平, 改善胚胎质量, 提高妊娠率。

关键词: 疏肝化瘀中药; 子宫内膜异位症(EMs); 体外受精-胚胎移植(IVF-ET); 生长分化因子-9 (GDF-9); 颗粒细胞

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Influence of Shuganhuayu Recipe on the Expression of GDF-9 in Granulosa Cells of Patients with Endometriosis

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【ABSTRACT】 Objective: To study the effect of Shuganhuayu decoction on growth differentiation factor-9 (GDF-9) expression in granulosa cells of endometriosis (EMs) patients. **Methods:** A total of 40 patients with EMs undergoing *in vitro* fertilization and embryo transfer (IVF-ET) were randomly divided into Chinese medicine + controlled ovarian hyperstimulation group (group A, $n=20$) and simple control of ovulation group (group B, $n=20$). IVF-ET patients due to tubal factor at the same period were selected as the control (group C, $n=20$). Western blotting assay was used to detect the GDF-9 expression in granulosa cells; and the number of oocytes retrieved, the fertilization rate, the good-quality embryo rate and the pregnancy rate in the three groups were compared. **Results:** In group B, the expression of GDF-9 (0.21 ± 0.09) in granulosa cells was lower than that of group C (0.84 ± 0.13) ($P<0.05$); in group A, the expression of GDF-9 (0.56 ± 0.12) in granulosa cells was higher than that of group B ($P<0.05$); the clinical pregnancy rate in group A (57.1%) was significantly higher than that in group B (38.4%) ($P<0.05$). **Conclusion:** GDF-9 expression in granulosa cells of EMs patients was lower than that in non-EMs women, Shuganhuayu decoction can improve GDF-9 expression levels in the patients with EMs, improve embryo quality and increase the pregnancy rate.

Key words: Shuganhuayu decoction; endometriosis (EMs); IVF-ET; growth differentiation factor-9 (GDF-9); granulosa cells

多囊卵巢综合征患者血清核因子- κ B和转化生长因子 β 1的表达及其与胰岛素抵抗的相关性研究

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【摘要】目的: 探讨多囊卵巢综合征(PCOS)患者血清中核因子- κ B(NF- κ B)、转化生长因子 β 1(TGF- β 1)的表达, 及NF- κ B、TGF- β 1与胰岛素抵抗(IR)的相关性。方法: 收集108例PCOS患者作为PCOS组, 47例正常女性作为对照组, 根据体质量指数(BMI)将其分为肥胖组($BMI \geq 28 \text{ kg/m}^2$)与非肥胖组($BMI < 28 \text{ kg/m}^2$), 根据胰岛素抵抗指数(HOMA-IR)将PCOS患者分为IR组($HOMA-IR \geq 2.69$)及非IR组($HOMA-IR < 2.69$); 应用酶联免疫法测量受试者血清中NF- κ B、TGF- β 1水平, 同时对入组患者进行葡萄糖耐量(OGTT)及胰岛素释放(IRT)测定。结果: ①PCOS患者血清中NF- κ B、TGF- β 1明显高于对照组($P < 0.05$), PCOS-IR组NF- κ B、TGF- β 1明显高于PCOS非IR组($P < 0.05$); ②Pearson相关分析显示, NF- κ B、TGF- β 1与PCOS患者的雄激素(T)水平、BMI、HOMA-IR呈正相关($P < 0.05$)。结论: NF- κ B、TGF- β 1与PCOS患者T水平、IR密切相关, TGF- β 1与NF- κ B亦呈正相关, NF- κ B、TGF- β 1与PCOS密切相关。

关键词: 多囊卵巢综合征(PCOS); 核因子- κ B(NF- κ B); 转化生长因子 β 1(TGF- β 1); 胰岛素抵抗(IR); 慢性炎症

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Serum Nuclear Factor- κ B and Transforming Growth Factor- β 1 and Those Relationship with Insulin Resistance in Polycystic Ovary Syndrome

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【ABSTRACT】 Objective: To study the expression of serum nuclear factor- κ B (NF- κ B) and transforming growth factor- β 1 (TGF- β 1) in polycystic ovary syndrome (PCOS) patient and analyze the correlation among insulin resistance (IR), NF- κ B and TGF- β 1. **Methods:** A total of 108 female patients with PCOS were recruited as PCOS group and compared with 47 healthy women from control group. Participants were divided into two groups based on body mass index (BMI), BMI \geq 28 kg/m² was considered as the obese group, BMI < 28 kg/m² was considered as the non-obese group; PCOS women were divided into two groups using the criterion of HOMA-IR \geq 2.69 as IR group and HOMA-IR < 2.69 as non-IR group. Serum NF- κ B and TGF- β 1 levels were measured using enzyme-linked immunosorbent assay (ELISA). Oral glucose tolerance test (OGTT) and insulin sensitivity were also assessed in the selected people. **Results:** 1) The PCOS group presented significantly higher serum NF- κ B and TGF- β 1 than those in the control ($P < 0.05$), while the two factors are obviously higher in PCOS-IR group than in PCOS-non-IR group ($P < 0.05$). 2) Pearson analysis revealed that NF- κ B and TGF- β 1 of the PCOS group had a positive correlation with HOMA-IR, BMI and testosterone (T) level ($P < 0.05$). **Conclusion:** NF- κ B is also positively correlated with TGF- β 1, while they have a strong link with IR and T level in women with PCOS.

Key words: polycystic ovary syndrome (PCOS); nuclear factor- κ B (NF- κ B); transforming growth factor- β 1 (TGF- β 1); insulin resistance (IR); chronic inflammation

不孕症女性体质量指数对IVF/ICSI-ET 治疗结局的影响

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【摘要】 目的: 探讨不孕症女性体质量指数(BMI)对 IVF/ICSI-ET 治疗结局的影响。方法: 将 1 371 例女性不孕症患者按年龄分成 ≤ 35 岁和 >35 岁者, 再按 BMI 分为 4 组: 低体质量组(A 组), $BMI < 18.5 \text{ kg/m}^2$, 正常体质量组(B 组), $BMI = 18.5 \sim 23.9 \text{ kg/m}^2$, 超重组(C 组), $BMI = 24.0 \sim 27.9 \text{ kg/m}^2$, 肥胖组(D 组), $BMI \geq 28 \text{ kg/m}^2$, 回顾性分析其 IVF/ICSI 新鲜取卵周期的相关指标及治疗结局。结果: ① 年龄 ≤ 35 岁患者中, C、D 组患者 Gn 使用时间显著长于 B 组 ($P < 0.01$); C、D 组患者 Gn 使用总量明显多于 A、B 组 ($P < 0.01$); C、D 组患者 hCG 注射日血清 E_2 水平显著低于 A、B 组, D 组显著低于 C 组, 差异均有统计学意义 ($P < 0.05$); D 组患者总获卵数显著低于 B、C 组, 差异有统计学意义 ($P < 0.05$); A、C、D 组患者卵成熟率显著低于 B 组 ($P < 0.05$), D 组显著低于 A、C 组 ($P < 0.01$); C、D 组患者临床妊娠率显著低于 B 组 ($P < 0.05$); C、D 组患者流产率显著高于 B 组 ($P < 0.05$); 各组总 ET 数、周期取消率、生化妊娠率及活产率差异均无统计学意义 ($P > 0.05$)。② 年龄 >35 岁患者中, D 组患者 Gn 使用时间及 Gn 使用总量显著高于 B、C 组 ($P < 0.05$); A 组患者卵成熟率显著低于 B、C 和 D 组 ($P < 0.05$); 其他临床指标差异均无统计学意义 ($P > 0.05$)。结论: BMI 过高可导致 IVF/ICSI 治疗过程中 Gn 使用时间延长、Gn 使用总量增加、临床妊娠率降低及流产率增加等, 但 BMI 在不同年龄组对 IVF/ICSI 结局影响程度不同, 对年龄较小(年龄 ≤ 35 岁)的影响更显著, 过高的 BMI 对 IVF 的结局有一定的负面影响。

关键词: 体质量指数(BMI); 体外受精/卵胞质内单精子注射-胚胎移植(IVF/ICSI-ET); 妊娠结局

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Influence of Body Mass Index on IVF/ICSI-ET Treatment Outcome among Infertility Women

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【ABSTRACT】 Objective: To explore the influence of female infertility body mass index (BMI) on the treatment outcomes after *in vitro* fertilization/intracytoplasmic sperm injection-embryo transfer (IVF/ICSI-ET). **Methods:** This retrospective study was performed on 1 371 women undergoing first cycle of standard IVF. The patients were classified into two groups by age (≤ 35 years old and >35 years old) and women in each group were classified into four groups according to their BMI, low weight group (group A): BMI <18.5 kg/m²; normal weight group (group B): BMI=18.5–23.9 kg/m²; overweight group (group C): BMI=24.0–27.9 kg/m²; obesity group (group D): BMI ≥ 28 kg/m². Information regarding the treatment related index and treatment outcomes of IVF-ET was compared within these four groups. **Results:** 1) In age ≤ 35 years old group, the day of Gn stimulation in group C and group D was longer than that in group B ($P<0.01$). Amount of Gn used in group C and group D was more than that in group A and group B ($P<0.05$), the amount of Gn used in group D was significantly more than that in group C ($P<0.05$). The serum E₂ level on hCG injection day in group C and group D was significantly lower than that in group A and group B, and which in group D was lower than that in group C ($P<0.05$). The number of oocytes obtained in group D was significantly less than that in group B and group C ($P<0.05$). The rate of mature oocytes in group B was significantly higher than that in group A, group C and group D ($P<0.05$), and it was significantly lower in group D than in group A and group C ($P<0.01$), the clinical pregnancy rate was significantly higher in group B than in group C and group D ($P<0.05$); the abortion rate was significantly lower in group B than in group C and group D ($P<0.05$). There was no significant difference among the 4 groups in the number of embryos transferred, the rate of cycles cancelled and live birth rate ($P>0.05$). 2) In age >35 years old group, the day of Gn stimulation and the amount of Gn used in group D were more than those in group B and group C ($P<0.05$). The rate of mature oocytes in group A was significantly lower than that in group B, group C and group D ($P<0.05$). There was no significant difference among the 4 groups about other clinical indicators. **Conclusion:** The higher BMI can lead to longer days of Gn stimulation and increase the amount of Gn used during IVF-ET. With higher BMI, the clinical pregnancy rate declined obviously and the abortion rate increased significantly. More significant influence on the group of younger (age ≤ 35 years old) was observed over high BMI value has a negative effect on IVF outcome.

Key words: body mass index (BMI); *in vitro* fertilization/intracytoplasmic sperm injection-embryo transfer (IVF/ICSI-ET); pregnancy outcome

自然周期紧急取卵在卵巢低反应患者中的应用

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【摘要】目的: 探索卵巢低反应患者自然周期的最佳取卵时机。方法: 从月经周期第12日起超声监测优势卵泡大小, 并测定血清卵泡刺激素(FSH)、黄体生成素(LH)、雌二醇(E₂)及孕酮(P)。非紧急取卵: 优势卵泡直径 ≥ 17 mm、E₂ ≥ 200 pg/ml, 若LH < 20 mIU/ml时, 当晚11:00注射短效促性腺激素释放激素激动剂(GnRH-a)0.1 mg或绒毛膜促性腺激素(hCG)10 000 IU诱发排卵, 32~34 h后取卵。紧急取卵: 诱发排卵次日复查血清LH、E₂、P, 若E₂显著下降则安排即时取卵。监测过程中若LH ≥ 20 mIU/ml, 无论卵泡大小均安排次日早上8:00取卵。结果: 共纳入605个周期, 553个周期获卵, 周期取消率为8.6%(52/605)。紧急取卵345例, 非紧急取卵208例。有效胚胎率在非紧急取卵组为47.6%(99/208), 显著高于紧急取卵组的30.4%(105/345)。结论: 紧急取卵是避免自然周期取消的有效方法, 虽然相对非紧急取卵有效胚胎率较低, 但仍可使部分卵巢低反应患者获得宝贵的胚胎。

关键词: 卵巢低反应; 自然周期; 紧急取卵

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Emergency Oocyte Pick Up in Natural Cycle Perform to Poor Ovarian Response Patient

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【ABSTRACT】 Objective: To explore the appropriate time to oocyte retrieval and embryology outcome of poor ovarian response patient in natural cycle. **Methods:** Leading follicular size and serum FSH, LH, E₂, P were measured since 12th day of the menstrual cycle. When dominant follicle diameter ≥ 17 mm, E₂ ≥ 200 pg/ml, LH < 20 mIU/ml, ovulation was triggered by GnRH-a 0.1 mg or hCG 10 000 IU on 23 : 00, oocyte retrieval was performed 32–34 h later in plan. Serum LH, E₂, P levels were measured again, if E₂ level decreased significantly, ovum pick-up was performed immediately. If LH ≥ 20 mIU/ml, oocyte retrieval was performed on 8 : 00 next morning no matter the follicular size. **Results:** A total of 605 cycles were performed, oocytes were obtained in 553 cycles, cycle cancelled rate was 8.6% (52/605). Totally, 345 cycles were emergency oocyte pick up cycles, while 208 cycles were planning oocyte pick up cycles. Valid embryo rate was 47.6% (99/208) in planning oocyte retrieval cycles, which was significantly higher than that in emergency oocyte retrieval cycles (30.4%, 105/345). **Conclusion:** According to poor ovarian response patient, emergency oocyte pick up is an effective method, although its valid embryo rate is low.

Key words: poor ovarian response; natural cycle; emergency oocyte pick up

• 综述 •

子宫内膜机械性刺激对改善子宫内膜容受性的研究进展

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【摘要】 着床是胚胎定位、黏附, 然后侵入子宫内膜的过程。它是一个涉及一系列细胞因子和生长因子, 以及胚胎与子宫内膜之间交互对话的复杂过程。胚胎着床是辅助生殖技术中关键的步骤之一, 成功植入取决于胚胎的侵入能力和子宫内膜的容受性。胚胎移植前子宫内膜的机械性刺激, 包括宫腔镜检查操作、子宫内膜搔刮或者活检, 能通过激发炎症反应、调整基因表达, 提高子宫内膜容受性, 进而提高患者的单胚种植率、临床妊娠率和活产率。

关键词: 子宫内膜; 机械性刺激; 子宫内膜容受性; 炎症; 基因表达

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Advance in Relationship between Endometrial Mechanical Stimulation and Endometrial Receptivity

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【ABSTRACT】 Implantation is a process of embryonic apposition and attachment to the endometrium and subsequent invasion into the stroma of the uterine wall. It is a complex process involving several cytokines and growth factors as well as a crosstalk between the embryo and the endometrium. Successful implantation of an embryo is a key step in assisted reproductive techniques (ART). It has been suggested that mechanical stimulation of the endometrium, including hysteroscopy, endometrial curettage or biopsy, prior to embryo transfer significantly improves endometrial receptivity and then increases implantation rate of single embryo, clinical pregnancy rate and live birth rate by provoking inflammation and regulating gene expression.

Key words: endometrium; mechanical stimulation; endometrial receptivity; inflammation; gene expression

遗传及相关因素与稽留流产关系的研究进展

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【摘要】 稽留流产是妇产科一种常见病, 导致稽留流产的病因包括遗传和环境等因素, 但确切机制尚不明确。众多研究表明, 稽留流产病因复杂, 与 *p53*、*MDM2* 或 *HDM2* 及 *ER* 等相关基因多态性及 *Fas/FasL* 系统、*Fas* 相关死亡结构域蛋白、*Livin*、*survivin*、*bax*、*caspase*、*HIF* 及 *AAH* 等基因表达异常有关; 另外环境因素包括化学物质、物理因素(如放射线、噪音及高温等) 以及不良生活习惯(如吸烟、饮酒、吸毒、过多使用电脑、手机、生活不规律及职业紧张等) 均可引起稽留流产。因此从遗传和环境两方面来进一步研究其发生发展机理, 可以更好地给临床实践提供指导。

关键词: 遗传因素; 环境因素; 稽留流产

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Advances in the Study of Genetic and Environmental Factors in Missed Abortion

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【ABSTRACT】 Missed abortion is a common obstetric disease and it is a multifactorial disorder, both genetic and environmental factors contribute to the development of missed abortion. But the exact mechanism is unclear. Numerous studies have shown that etiologies of missed abortion are complex. Known etiologies of missed abortion include mutations of *p53*, *MDM2* (*HDM2*) and *ER* gene, abnormal expression of Fas/FasL system, FADD, Livin, surviving, bax, caspase, HIF and AAH gene. Environmental factors include chemicals, physical factors (radioactive rays, noise and high temperature, etc.) and unhealthy living habits (smoking, drinking, taking drugs, using computers and mobile phone often, irregular life and great work pressure, etc.). So studying the mechanism of missed abortion according to the genetic and environmental factors is very important for guiding clinical practice.

Key words: genetic factor; environmental factor; missed abortion

避孕药的药动力学分析方法研究进展

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【摘要】 药动力学是现代药物研究的重要内容之一, 而避孕药作为育龄女性常用药物也需要关注其体内血药浓度范围。因避孕药体内含量低, 内源性干扰大, 需选用适宜的检测方法才能进行测定。本文以国内、外近年来的研究结果为依据, 分别介绍了高效液相色谱法、气质联用法、免疫分析法、同位素示踪法等分析方法在避孕药药动力学研究中的应用, 并概括了各种方法的优缺点和应用范围, 为后续避孕药药动力学的研究提供参考。

关键词: 避孕药; 药动力学

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Progress of the Analysis Methods for Contraceptive Drug Pharmacokinetics

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【ABSTRACT】 Pharmacokinetic is one of the important contents in drug research, while contraceptives as common medicine for reproductive age women also need to be focused on plasma concentration range. Due to low concentration and endogenous interference, appropriate measuring method should be selected to test its concentration. According to the results of studying the pharmacokinetics of contraceptive drugs at home and abroad in recently years, this paper introduced analysis methods, such as chromatography, GC-MS, immunoassay, and isotope tracer method, and summarized the advantages and disadvantages of the various methods. It will provide a reference For subsequent pharmacokinetic studies of contraceptive drugs.

Key words: contraceptive; pharmacokinetics

· 临床报道 ·

异位妊娠手术治疗后血 β -hCG及孕酮 变化规律的临床研究

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【摘要】 目的: 探讨异位妊娠不同手术方式治疗后血 β -hCG及孕酮(P)的下降规律和临床疗效。方法: 对采用不同手术方式(开腹手术及腹腔镜手术、保守性手术及根治性手术)治疗的165例异位妊娠患者的临床资料进行回顾性分析, 分析手术治疗后不同时期血 β -hCG及P水平的动态变化规律, 血清中P及 β -hCG采用全自动化学发光免疫分析仪测定。结果: ①异位妊娠患者不同手术方式治疗后第1日血hCG及P下降百分比的平均值分别为 $62.7 \pm 11.6\%$ 和 $61.7 \pm 17.8\%$, 术后血 β -hCG水平降至正常水平的时间平均为 13.1 ± 5.3 d。②异位妊娠患者经手术治疗后, 血 β -hCG下降百分比在术后24 h、48 h、72 h及术后1周存在显著差异, 血 β -hCG随着术后恢复时间逐渐降至正常($F=408.39, P<0.001$), 血P下降百分比在术后24 h、48 h、72 h及术后1周也存在显著统计学差异($F=159.04, P<0.001$); ③血 β -hCG及P下降百分比在不同手术方法与术后恢复时间的交互作用分析未见统计学差异。结论: 异位妊娠患者手术治疗后血 β -hCG、P水平随着时间的推移在术后2周左右逐渐降至正常水平, 选择不同手术方式治疗后血 β -hCG、P水平恢复至正常水平下降的时间差异无明显统计学意义。对于异位妊娠患者手术方式的选择, 应依据患者年龄、生育要求、发病急缓及病情、医院医疗水平等来决定。

关键词: 异位妊娠; 手术方式; 血 β -hCG; 孕酮(P)

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Research on β -hCG and P Levels of Ectopic Pregnancy by Different Surgical Treatments

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【ABSTRACT】 Objective: To determine the decline trend of serum β -hCG and progesterone (P) of the patients with ectopic pregnancy after different surgical methods and to evaluate their effectiveness. **Methods:** A total of 165 clinical materials with ectopic pregnancy treated with different surgical methods (laparotomy vs laparoscopic surgery and conservative vs radical surgery) were retrospectively analyzed. The levels of serum β -hCG and P were determined by using automatic chemical luminescent immuno-analyzer, the decline trend of serum β -hCG and P of the patients with different surgical methods was delimited and their effectiveness was evaluated. **Results:** 1) In patients with ectopic pregnancy after different surgical methods, the levels of serum β -hCG and P have an average decline rate of $62.7 \pm 11.6\%$ and $61.7 \pm 17.8\%$ within the first postoperative day respectively. The average length of time to reduce the serum β -hCG to normal level was 13.1 ± 5.3 d. 2) The decline percentage ratio of serum β -hCG and P levels at 24 h, 48 h, 72 h and 1 week after surgery had a significant difference. The serum β -hCG will reduce to normal range with postoperative recovery ($F=408.39$, $P<0.001$). 3) There was no significant difference in the analysis of the decline percentage rate of serum β -hCG and P under the interactive effect between different surgical methods and postoperative recovery time. **Conclusion:** The level of serum β -hCG and P will reduce to normal range about 2 weeks after surgery in ectopic pregnancy cases. There is no significant statistical difference in the decline rate of serum β -hCG and P in different surgical methods. We should select suitable surgical methods according to the age, fertility demand, the course of disease, and the level of clinical skills of the hospital.

Key words: ectopic pregnancy; surgical methods; β -hCG; progesterone

丙氨瑞林诱导排卵对预防OHSS的作用

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【摘要】 目的: 探讨丙氨瑞林代替hCG诱导排卵预防卵巢过度刺激综合征(OHSS)的临床应用。方法: 分析WHO II型无排卵患者333个超促排卵周期, 患者均于月经周期第3~5日开始口服克罗米芬(CC)50 mg, qd × 5 d; 或来曲唑(LE)2.5 mg, qd × 5 d, 月经第8~10日开始肌肉注射hMG至hCG注射日。阴道B超下显示≤2个优势卵泡者纳入A组, 肌肉注射hCG 10 000 U; ≥3个优势卵泡者纳入B组, 当日肌肉注射丙氨瑞林0.15~0.45 mg; 排卵后均给予黄体支持并指导同房。结果: A组186个周期, B组147个周期, A、B组间轻度OHSS发生率(8.1% vs 2.7%)、中度OHSS发生率(3.2% vs 1.4%)以及排卵率(88.7% vs 95.2%)、临床妊娠率(21.0% vs 34.8%)均有显著性差异($P < 0.05$), 但流产率(15.4% vs 18.8%)差异无统计学意义($P > 0.05$)。结论: 丙氨瑞林代替hCG诱发排卵可有效降低OHSS发生率, 并使排卵率以及临床妊娠率明显提高。

关键词: 丙氨瑞林; 诱导排卵; 卵巢过度刺激综合征(OHSS)

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Effect of Alarelin in Preventing OHSS for Triggering Ovulation

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【ABSTRACT】Objective: To explore the effect of alarelin in preventing ovarian hyperstimulation syndrome (OHSS) for triggering ovulation. **Methods:** A total of 333 cycles of WHO II non-ovulation patients were analyzed. All patients were treated with oral clomiphene (CC) 50 mg × 5 d or letrozole (LE) 2.5 mg × 5 d on 3–5th day of menstrual cycles, and were administered hMG on menstruation 8–10th day till hCG injection day. The patients with ≤ 2 dominant follicles integrated to group A ($n=186$), the patients with ≥ 3 dominant follicles integrated to group B ($n=147$). Group A were intermuscular injected hCG 10 000 U, group B were intermuscular injected alarelin 0.15–0.45 mg. Both groups were for luteal support. **Results:** The mild (8.1% vs 2.7%) and moderate OHSS rates (3.2% vs 1.4%) as well as the ovulation rate (88.7% vs 95.2%) and the clinical pregnancy rate (21.0% vs 34.8%) between the two groups had the statistically significant differences, the difference of the abortion rate (15.4% vs 18.8%) did not have the significance. **Conclusion:** The use of alarelin instead of hCG is able to successfully induce ovulation and causes the ovulation rate as well as the clinical pregnancy rate clearly enhance.

Key words: alarelin; ovulation induction; ovarian hyperstimulation syndrome (OHSS)

宫、腹腔镜下输卵管插管联合人工授精治疗 输卵管梗阻性不孕

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【摘要】 目的: 观察宫腹腔镜下输卵管插管联合人工授精治疗输卵管梗阻性不孕的临床疗效。
方法: 将40例输卵管梗阻性不孕且经宫腹腔镜下输卵管插管治疗后1年仍未孕的患者随机分为非人工授精组($n=20$), 给予监测排卵下自然周期或控制性促排卵指导性生活自然受孕的期待方法治疗; 人工授精组($n=20$), 给予监测排卵下自然周期或控制性促排卵行夫精人工授精(IUI)治疗, 观察其妊娠结局。结果: 人工授精组临床妊娠率为 25.00%, 周期妊娠率为 11.90%, 与非人工授精组的 15.00%、4.35% 比较, 差异均有统计学意义($P<0.05$)。结论: 宫、腹腔镜下输卵管插管联合人工授精治疗输卵管梗阻性不孕疗效满意, 值得临床关注。

关键词: 输卵管梗阻性不孕; 宫腹腔镜; 输卵管插管; 人工授精

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Palace Laparoscopic Tubal Intubation Combined with Artificial Insemination Treating Fallopian Tube Obstructive Infertility

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【ABSTRACT】 Objective: To observe the clinical curative effect of the palace laparoscopic tubal intubation combined with artificial insemination on treating fallopian tube obstructive infertility. **Methods:** Forty cases of fallopian tube obstructive infertility who were still not pregnant after treatment with palace laparoscopic tubal intubation one year were randomly divided into two groups, non artificial insemination group ($n=20$) were given under monitoring ovulation or controlling natural cycle ovulation guiding life naturally conceived forward to treatment. Artificial insemination group ($n=20$) were given monitoring ovulation under natural cycle or stimulate ovulation control line, pure artificial insemination treatment. Pregnancy outcomes were compared between the two groups. **Results:** In artificial insemination group, the clinical pregnancy rate was 25.00%, the cycle pregnancy rate was 11.90%, in non artificial insemination group, they were 15.00% and 4.35%, respectively, the difference had statistical significances between the two groups ($P<0.05$). **Conclusion:** Palace laparoscopic tubal intubation combined with artificial insemination for treating fallopian tube obstructive infertility has a satisfied curative effect and is worth paying clinical attentions.

Key words: fallopian tube obstructive infertility; palace laparoscopy; tubal intubation; artificial insemination