

• 专家风采 •

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• 实验研究 •

氯化锶不同浓度及作用时间对小鼠 孤雌胚类原核数量的影响

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【摘要】 目的: 探讨不同浓度及作用时间的氯化锶(SrCl_2)对小鼠卵母细胞孤雌激活胚胎中出现类原核数量及发育潜能的影响, 建立能模拟精子效应的小鼠孤雌的激活体系。方法: 分别用 5 mmol/L、10 mmol/L、15 mmol/L、20 mmol/L 浓度的 SrCl_2 激活小鼠卵母细胞, 观察激活胚的类原核数量及发育潜能, 然后在最佳刺激浓度的 SrCl_2 的激活液中分别处理 4 h、6 h、8 h, 观察类原核数目及形态, 分析 SrCl_2 浓度对小鼠卵母细胞激活效果的影响。结果: hCG 注射后 18 h 取小鼠卵母细胞, 在 10 mmol/L SrCl_2 浓度下激活 6 h, 出现双原核(2PN)百分比显著高于其它浓度 SrCl_2 处理组 ($P < 0.01$), 且与小鼠体外受精 6 h 后的 2PN 率及囊胚形成率无统计学差异 ($P > 0.05$)。结论: 10 mmol/L SrCl_2 条件下激活小鼠卵子 6 h 产生的孤雌胚胎中出现 2PN 率及发育潜能最高, 提示 10 mmol/L SrCl_2 激活处理 6 h 可以模拟精子对卵子的激活条件。

关键词: 氯化锶(SrCl_2); 卵母细胞; 孤雌激活; 类原核; 发育潜能

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Effect of Different Strontium Chloride Concentrations and Action Time on the Number of Analogous Pronuclear in Mouse Parthenogenetic Embryos

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【ABSTRACT】 Objective: To explore different concentrations and action time of strontium chloride (SrCl_2) on the impact of developmental potential and quantity of analogous pronuclear formation in mouse parthenogenetic embryos, and to establish a parthenogenetic activation system that could simulate the effect of mouse sperm activation. **Methods:** Different concentrations including 5 mmol/L, 10 mmol/L, 15 mmol/L, 20 mmol/L of SrCl_2 were used to activate mouse oocytes, to select the most proper concentration of SrCl_2 which could induce the largest rate of activated oocytes. Mouse oocytes were treated under the most proper concentration of SrCl_2 for 4 h, 6 h, 8 h, respectively. Parthenogenetic activation was observed through the number of analogous pronuclear formation and developmental potential. **Results:** Mouse oocytes were collected 18 h after hCG injection and activated for 6 h under 10 mmol/L SrCl_2 , the percentage of double-analogous pronuclear formation was significantly higher than other groups ($P < 0.05$), the blastocyst number was also significantly higher than others ($P < 0.05$), but has no significant differences compared with *in vitro* fertilization (IVF) 6 h embryo group ($P > 0.05$). **Conclusion:** When mouse oocytes activating for 6 h under 10 mmol/L SrCl_2 , double-analogous pronuclear proportions and developmental potential of the parthenogenetic embryos were the highest, suggesting that 10 mmol/L SrCl_2 combined 6 h activation process can simulate sperm activation conditions.

Key words: strontium chloride (SrCl_2); oocytes; parthenogenetic activation; analogous pronuclear; developmental potential

• 临床研究 •

囊性纤维化跨膜转导调节因子(CFTR)表达率与人精子获能及顶体反应间相关性研究

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【摘要】目的: 研究人精子囊性纤维化跨膜转导调节因子(cystic fibrosis transmembrane conductance regulator, CFTR)表达率与精子获能及顶体反应间的相关性。方法: 通过间接免疫荧光染色法观察CFTR在人精子上的表达率, 金霉素染色法评估精子获能及顶体反应。结果: CFTR定位在人精子赤道板上, 随着CFTR表达率降低, 精子获能率也随之降低, 故CFTR表达率与人精子获能呈正相关($r=0.985, P<0.01$), 而且精子顶体反应率也随之减少, 因此CFTR表达率与人精子顶体反应呈正相关($r=0.979, P<0.05$)。结论: 人精子CFTR表达率与精子获能及顶体反应呈正相关。

关键词: 囊性纤维化跨膜转导调节因子(CFTR); 表达率; 人精子; 获能; 顶体反应

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Expression Percentage of Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) is Related to Human Sperm Capacitation and the Acrosome Reaction

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【ABSTRACT】 Objective: To investigate the correlation between the expression percentage of human sperm cystic fibrosis transmembrane conductance regulator (CFTR) and sperm capacitation and the acrosome reaction. **Methods:** The percentage of spermatozoa expressing CFTR was conducted by indirect immunofluorescence staining. And sperm capacitation and the acrosome reaction were examined by chlorotetracycline staining. **Results:** CFTR protein was localized to the equatorial segment on the sperm head. And the defective expression percentage of CFTR in human sperm was related to a reduction of sperm capacitation ($r=0.985$, $P<0.01$) and the acrosome reaction ($r=0.979$, $P<0.05$). **Conclusion:** The expression percentage of spermatozoa CFTR was correlated to sperm capacitation and the acrosome reaction.

Key words: cystic fibrosis transmembrane conductance regulator (CFTR); expression percentage; human sperm; capacitation; acrosome reaction

转录因子 Ets 差异基因 5(*ETV5*)基因多态性与非梗阻性无精子症相关性研究

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【摘要】目的: 探讨转录因子 Ets 差异基因 5(*ETV5*)基因多态性与非梗阻性无精子症的易感性的相关性。方法: 应用 Sequenom MassArray 质谱阵列技术对 368 例已生育的汉族男性人群(对照组)和 361 例汉族男性非梗阻性无精子症(病例组)*ETV5* 基因的 5 个标签单核苷酸多态(single nucleotide polymorphism, SNP)位点(rs12631658, rs6444106, rs7430047, rs7433760, rs9824882)进行基因型检测。应用 Plink1.07 软件对数据资料进行统计分析, 比较对照组与病例组最小等位基因频率(MAF)及基因型差异, 运用 Haploview 软件对 *ETV5* 基因进行单体型分析。结果: *ETV5* 基因 5 个标签 SNP 的等位基因频率、基因型分布组间比较均无统计学差异($P>0.05$), 进一步的单体型分析亦未显示有统计学差异($P>0.05$)。结论: *ETV5* 基因 5 个标签 SNP 位点多态性与汉族男性非梗阻性无精子症的发生可能不相关。

关键词: 不育症; 非梗阻性无精子症(NOA); *ETV5* 基因; 单核苷酸多态性(SNP)

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Relationship of Ets Variant Gene 5 (*ETV5*) Gene Variants with Non-obstructive Azoospermia in Chinese Population

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【ABSTRACT】 Objective: To investigate the relationship of Ets variant gene 5 (*ETV5*) gene polymorphism with the risk of non-obstructive azoospermia (NOA) in Chinese population. **Methods:** A total of 361 cases with idiopathic NOA, and 368 fertile controls were selected. This study genotyped 5 single-nucleotide polymorphisms (SNPs) (rs12631658, rs6444106, rs7430047, rs7433760, rs9824882) in *ETV5* using Sequenom iPLEX. Allele frequencies and genotype analysis between control group and case group were compared by using Plink 1.07 software. Haplotype analysis was studied by Haploview Software. **Results:** The allele frequencies of the 5 SNPs were not statistically different between case group and control group as well as the genotype distribution ($P>0.05$). Similarly, no difference was observed between case group and control group in haplotype analysis ($P>0.05$). **Conclusion:** The five SNPs of *ETV5* may not be associated with NOA in Chinese population.

Key words: sterility; non-obstructive azoospermia (NOA); *ETV5* gene; single nucleotide polymorphisms (SNPs)

睾酮对3T3-L1脂肪细胞胰岛素敏感性影响的机制研究

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【摘要】目的: 探讨睾酮(T)对离体3T3-L1脂肪细胞胰岛素(Ins)信号通路影响的分子机制。方法: 将3T3-L1前脂肪细胞诱导成熟, 用 10^{-5} mol/L T处理12 h, 免疫印迹检测细胞Ins受体底物-1(IRS-1)的酪氨酸磷酸化水平及其总蛋白IRS-1、葡萄糖转运蛋白-4(GLUT-4)的表达, 以及Ins刺激下膜蛋白GLUT-4的表达。加入核因子- κ B(NF- κ B)或ERK1/2的抑制剂预处理, 再用免疫印迹检测细胞总蛋白中IRS-1的酪氨酸磷酸化水平及其总蛋白IRS-1、GLUT-4的表达, 以及Ins刺激下膜蛋白GLUT-4的表达, [³H]-2-脱氧葡萄糖([³H]-2-DG)掺入法检测葡萄糖摄取率。结果: 10^{-5} mol/L睾酮处理12 h与非T处理组相比, 细胞总蛋白IRS-1及GLUT-4的表达均增多($P<0.05$), 但使Ins刺激下的IRS-1的酪氨酸磷酸化水平及膜蛋白GLUT-4的表达减少($P<0.05$), 加入ERK1/2或NF- κ B的抑制剂后, IRS-1的酪氨酸磷酸化水平及膜蛋白GLUT-4的表达、葡萄糖摄取率能部分逆转。结论: ERK1/2/NF- κ B信号通路是睾酮引起胰岛素抵抗(IR)的途径之一。

关键词: 睾酮(T); 3T3-L1脂肪细胞; ERK1/2; 核因子- κ B(NF- κ B); 胰岛素敏感性

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Effect of Testosterone on Insulin Sensitivity in 3T3-L1 Adipocytes

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【ABSTRACT】 Objective: To explore the molecular mechanisms of effect of testosterone on insulin sensitivity in 3T3-L1 adipocytes *in vitro*. **Methods:** In basic state, matured 3T3-L1 adipocytes were treated with 10^{-5} mol/L testosterone for 12 h. In another experiment, adipocytes were manipulated following the same protocol except that cells were pretreated with PDTC (inhibitor of NF- κ B) or PD98059 (inhibitor of ERK1/2) for 2 h. The productions of insulin receptor substrate-1 (IRS-1), Tyr941p IRS-1, GLUT-4 and the membrane proteins of GLUT-4 stimulated by insulin were analysed by Western blotting. The response of insulin-stimulated glucose uptake to pretreated by testosterone was determined by adding 2-deoxy [³H] glucose to differentiated 3T3-L1 adipocytes. **Results:** 3T3-L1 adipocytes treated with 10^{-5} mol/L testosterone within 12 h obviously increased production of IRS-1 and GLUT-4 ($P<0.05$), while decreased the insulin-stimulated Tyr941p IRS-1 and membrane protein GLUT-4 production ($P<0.05$). While pretreated with PDTC or PD98059, the decreased production of insulin-stimulated Tyr941p IRS-1 and membrane protein GLUT-4 could be partially reversed, and so did the response of insulin-stimulated glucose uptake. **Conclusion:** Testosterone could induce insulin resistance (IR) via ERK1/2/NF- κ B pathway.

Key words: testosterone (T); 3T3-L1 adipocytes; ERK1/2; NF- κ B; insulin sensitivity

卵母细胞分泌的生长分化因子-9和骨形成蛋白-15与卵母细胞发育潜能的关系

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【摘要】目的: 探讨卵母细胞分泌的生长分化因子-9(GDF-9)和骨形成蛋白-15(BMP-15)与卵母细胞发育潜能的关系。方法: 收集因输卵管性不孕接受IVF-ET治疗患者的卵泡, 每侧卵巢穿刺取卵时首先选择一个直径 ≥ 18 mm 卵泡抽吸, 对卵母细胞进行成熟度分型, 并观察其受精、卵裂及胚胎评分情况。受精后按是否形成优质胚胎将卵母细胞分为优质卵母细胞组和非优质卵母细胞组, 采用Western blotting方法检测比较各组卵泡液中GDF-9和BMP-15的含量。结果: ①优质卵母细胞组的GDF-9蛋白相对含量为 2.498 ± 0.133 , 非优质卵母细胞组为 1.305 ± 0.406 , 差异有统计学意义($P=0.008$)。②优质卵母细胞组的BMP-15蛋白相对含量为 3.379 ± 0.482 , 非优质卵母细胞组为 1.336 ± 0.214 , 差异有统计学意义($P=0.003$)。结论: 在优质卵母细胞组卵泡液中GDF-9和BMP-15水平较高, 提示人卵泡液中GDF-9、BMP-15水平可以反映卵母细胞的发育潜能, GDF-9、BMP-15水平可以作为评价卵母细胞质量的指标。

关键词: 卵母细胞分泌因子(OSFs); 生长分化因子-9(GDF-9); 骨形成蛋白-15(BMP-15); 卵母细胞发育潜能

中图分类号: Q492.5, R711.6 文献标识码: A 文章编号: 0253-357X(2014)03-0200-05

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Relationship of Growth Differentiation Factor-9 and Bone Morphogenetic Protein-15 Secreted by Oocytes with Oocyte Development Potency

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【ABSTRACT】 Objective: To evaluate the relationship of growth differentiation factor-9 (GDF-9) and bone morphogenetic protein-15 (BMP-15) secreted by oocytes with oocyte development potential. **Methods:** Follicle fluid (FF) from the first aspirated follicle (diameter ≥ 18 mm) of each ovary was carefully collected in a tube. Individual oocytes were inseminated and subsequently assessed on the basis of their maturation, fertilization, cleavage and preimplantation development. The oocytes were divided into good-quality oocyte group which developed to good-quality embryos and bad-quality oocyte group. FF samples were centrifuged and collected. The GDF-9 and BMP-15 levels in FF were measured by Western blotting. **Results:** 1) The level of GDF-9 in FF was 2.498 ± 0.133 in good-quality oocyte group and 1.305 ± 0.406 in bad-quality oocyte group. The level of GDF-9 in good-quality oocyte group was significantly higher than that in bad-quality oocyte group ($P=0.008$). 2) The level of BMP-15 in FF was 3.379 ± 0.482 in good-quality oocyte group and 1.336 ± 0.214 in bad-quality oocyte group. The level of BMP-15 in good-quality oocyte group was significantly higher than that in bad-quality oocyte group ($P=0.003$). **Conclusion:** The level of GDF-9 and BMP-15 in FF appears to be potential factors in predicting oocyte quality and subsequent embryo development.

Key words: oocyte secreted factors (OSFs); growth differentiation factor-9 (GDF-9); bone morphogenetic protein-15 (BMP-15); oocyte development potential

200 IU hCG 替代 hMG 在晚卵泡期应用于 控制性卵巢刺激的疗效观察

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【摘要】目的: 探讨 200 IU hCG 在控制性卵巢刺激(COS)过程的晚卵泡期替代 hMG 对 COS 的疗效。方法: 回顾性分析行体外受精/单精子卵胞质内注射-冻融胚胎移植(IVF/ICSI-FET)患者资料共 154 例, 进行 154 个 COS 周期, 根据晚卵泡期是否应用 200 IU hCG 分为: A 组, COS 完全应用 hMG(65 个周期); B 组, COS 的早卵泡期应用 hMG, 晚卵泡期则应用 hCG(200 IU/d)替代 hMG(89 个周期)。后续 166 个周期进行 FET, 其中, A 组 70 个周期, B 组 96 个周期。统计分析 COS 周期的用药情况、IVF/ICSI-FET 结局。结果: B 组的 hMG 用药剂量和用药时间分别显著少于 A 组(1361.0 ± 494.6 IU vs 1782.7 ± 475.2 IU, $P < 0.05$; 7.3 ± 2.3 d vs 9.5 ± 2.0 d, $P < 0.05$); B 组的成熟卵母细胞数显著多于 A 组(15.2 ± 6.6 vs 11.6 ± 5.7 , $P < 0.05$); 冻融胚胎移植中 A、B 组的临床妊娠率(64.29% vs 64.58% , $P > 0.05$)及活产率(80.00% vs 79.03% , $P > 0.05$)比较无统计学差异。结论: 200 IU hCG 能够在 COS 的晚卵泡期替代 hMG, 能安全、有效地维持卵泡生长发育, 并且减少 Gn 的用量, 避免卵巢过度刺激综合征(OHSS)发生。

关键词: hCG; 小剂量; 控制性卵巢刺激(COS); 体外受精/单精子卵胞质内注射-冻融胚胎移植(IVF/ICSI-FET)

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Effect of 200 IU hCG Replacing hMG in the Late Follicular Phase of Controlled Ovarian Stimulation for IVF Cycle

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【ABSTRACT】 Objective: To explore whether low-dose hCG can be used clinically to replace hMG during the late follicular phase in controlled ovarian stimulation (COS) for IVF cycle. **Methods:** A total of 154 IVF/ICSI patients undergoing COS in a short-term protocol were divided into two groups: group A, hMG throughout COS (65 cycles); group B, ovarian priming with hMG followed by low-dose hCG (200 IU/d) alone (89 cycles). After COS, 166 FET cycles had been undergone. **Results:** Mean values for dose and duration of hMG treatment in group B versus group A were $1\ 361.0 \pm 494.6$ IU vs $1\ 782.7 \pm 475.2$ IU ($P < 0.05$), and 7.3 ± 2.3 d vs 9.5 ± 2.0 d ($P < 0.05$), respectively. The mean number of metaphase II oocytes in group B was higher than that in group A (15.2 ± 6.6 vs 11.6 ± 5.7 , $P < 0.05$). Clinical pregnancy rate, live birth rate of FET in group A were not significantly different from group B (64.29% vs 64.58%, $P > 0.05$) (80.00% vs 79.03%, $P > 0.05$). **Conclusion:** Replacing of hMG by low-dose hCG (200 IU) in the late phase of COS can complete stimulate safely and effectively, which leads to a reduction of Gn consumption and avoids the incidence of ovarian hyperstimulation syndrome (OHSS).

Key words: hCG; low-dose; controlled ovarian stimulation (COS); *in vitro* fertilization (IVF); intracytoplasmic sperm injection (ICSI); frozen-thawed embryo transfer (FET)

宫腔粘连术后留置玻璃酸钠联合 大剂量雌激素预防再发粘连

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【摘要】目的: 观察宫腔粘连(IUA)分解术后宫腔内放入玻璃酸钠联合大剂量雌激素口服预防再粘连的效果。方法: 宫腔镜确诊为IUA患者272例, 分为A组和B组, A组($n=103$)行宫腔镜下IUA分离术及宫腔内节育器(IUD)放置术, 术后口服大剂量雌激素及孕激素人工周期3个月; B组($n=169$)在A组相同治疗的基础上加宫腔内留置玻璃酸钠; 比较A组和B组的疗效。结果: 中度粘连患者术后粘连再发率B组显著低于A组($P<0.05$); A、B组的治疗有效率分别为: 轻度粘连100%、100%; 中度粘连83.3%、94.6%; 重度粘连68.2%、83.9% (P 均 >0.05); 轻、中度IUA的治愈率B组显著高于A组($P<0.05$)。结论: IUA分解术后宫腔内留置玻璃酸钠联合大剂量雌激素口服可提高预防再粘连的效果, 特别对轻、中度IUA效果显著。

关键词: 宫腔粘连; 玻璃酸钠; 雌激素; 术后再粘连

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Intrauterinely Detained Sodium Hyaluronate and Oral Large Dose Estrogen Against Recurrence of Intrauterine Adhesions after Transcervical Release of Adhesions

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【ABSTRACT】 Objective: To investigate the effects of intrauterine sodium hyaluronate coupled with oral large dose of oral estrogen on prevention of recurrent intrauterine adhesions (IUA) after transcervical release of adhesions (TCRA). **Methods:** Totally 272 cases, which were finally diagnosed as IUA and underwent hysteroscopy during hospitalization, were enrolled. Among them 103 cases (group A) were orally administered with large dose of progynova and progestogen for 3-month artificial cycles, and the other 169 cases (group B) were treated as the same as group A with the exception of addition of intrauterinely detained sodium hyaluronate post-operatively for 3 d. Efficacy between the two groups was compared. **Results:** The recurrence rates for post-operative adhesions were significantly lowered in group B compared with group A regarding moderate IUA ($P<0.05$). The overall effective rates (cured + effective efficacy) for groups A and B were shown as following: 100% and 100% for mild IUA, 83.3% and 94.6% for moderate IUA, and 68.2% and 83.9% for severe IUA (all $P>0.05$). For mild and moderate IUA, significantly increased cure rates were indicated in group B versus group A ($P<0.05$). **Conclusion:** Addition of intrauterinely detained sodium hyaluronate, coupled with large dose of oral estrogen, is effective on prevention of recurrent IUA especially in the mild and moderate types after TCRA.

Key words: intrauterine adhesion; sodium hyaluronate; estrogen; postoperative recurrent adhesion

· 管理论坛 ·

云南和安徽两省县、乡计划生育机构宫内节育器放置人员工作满意度差异分析

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【摘要】目的:了解云南和安徽两省县、乡计划生育机构宫内节育器(IUD)放置人员工作满意度及其差异。方法:采用JSS工作满意度量表对县、乡计划生育服务机构496名IUD放置人员进行问卷调查并作统计分析。结果:县、乡计划生育机构IUD放置人员工作满意度得分为 142.4 ± 24.1 ,不同维度中得分较高项包括领导、沟通和同事满意度;较低项包括薪酬、晋升和福利。县级IUD放置人员工作满意度要高于乡级,主要表现在晋升、领导、回报、同事、工作性质、工作流程等方面。多因素回归分析显示县级IUD放置人员工作满意度主要受年龄、教育程度、执业类型和近5年培训次数影响;而乡级IUD放置人员主要受教育程度、职称和从事IUD放置工作年限影响。结论:县级计划生育服务机构IUD放置人员工作满意度高于乡级计划生育服务机构,人才结构及其工作环境是差异的主要原因。

关键词: 宫内节育器(IUD); 工作满意度; 县级; 乡级; 计划生育

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Investigation and Analysis on Job Satisfaction Difference of Staff Providing IUD Insertion Service in Family Planning Clinics at Country and Township Level in Yunnan and Anhui Province

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【ABSTRACT】 Objective: To investigate job satisfaction and its difference of staff providing intrauterine device (IUD) insertion service in family planning clinics at country and township level of Yunnan and Anhui province. **Methods:** Job satisfaction survey scale was used to conduct a questionnaire survey on 496 of IUD insertion service staff in family planning clinics at county and township level in Anhui and Yunnan province, and a statistical analysis was conducted. **Results:** The job satisfaction score of staff providing IUD insertion service was 142.4 ± 24.1 . Among the 9 dimensions, the scores of supervisions, communications, coworkers were higher than other aspects; while salary, promotion, fringe benefits scores were lower than other aspects. The score of staff providing IUD insertion service in county's family planning clinics was higher than that in township's clinics. The difference was mainly in promotion, supervisions, rewards, coworkers, the nature of work, workflow. Results of multinomial regression analysis showed that influencing factors of the satisfaction were age, education, position and training times in the past 5 years in country's family planning clinics, and education, professional title and work experience in town's family planning clinics. **Conclusion:** The score of staff providing IUD insertion service in county's family planning clinics is higher than that in township's clinics. The difference is mainly caused by talent structure and working situations.

Key words: intrauterine device (IUD); job satisfaction; county and town; family planning

辅助生殖的应急管理及电子化病例应用总结

——关于地震时的危机管理与胚胎培养信息完全电子化研究

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【摘要】为应对地震等突发性重大自然灾害, 强化培养箱的驱动电线, 增设培养箱台架的固定支柱, 以增强耐震性。同时采取红外线监控、扩充防灾用品、扩充食物储备的等措施。对于胚胎的培养, 完善胚胎培养信息的电子化管理进程, 可避免或减少自然灾害及人为造成错误。

关键词: 辅助生殖中心; 应急管理; 电子化

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Emergency Management and Electronic Case Application in Assited Reproduction ——Research on Crisis Management in the Earthquake and Complete Electronization of Embryo Culture Infromation

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【ABSTRACT】 In order to face unexpected major natural disaster such as earthquake, driving wires in the incubator should be reiforced, permanent stanchions under the incubator platform should be increased to enhance the earthquake resistance. Meanwhile, we should use infrared monitoring, increase supplies of disaster prevention and food reserves. For embryo culture, the process of electronic embryo culture information management should be promoted in case natural disaster and human errors.

Key words: assisted reproductive center; emergency management; electronization

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· 综述 ·

过氧化物酶体增殖物激活受体 γ 与妊娠的研究进展

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【摘要】 过氧化物酶体增殖物激活受体(PPARs)是配体激活的转录因子, 有 PPAR α 、PPAR β 和 PPAR γ 3种亚型, PPAR γ 除了拥有如抗炎、细胞分化、代谢调控等 PPARs 的共同功能外, 还在妊娠中扮演重要角色。本文将从 PPAR γ 在胎盘中的表达、PPAR γ 在胎盘发育中作用(PPAR γ 与滋养层细胞的分化和侵袭; PPAR γ 与胎盘脂肪代谢)、PPAR γ 与分娩的关系以及病理性妊娠阐释 PPAR γ 对于妊娠的重要意义。

关键词: 过氧化物酶体增殖物激活受体 γ (PPAR γ); 妊娠; 胎盘; 滋养层细胞

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Research Advances on Peroxisome Proliferator Activated Receptor γ and Pregnancy

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【ABSTRACT】 Peroxisome proliferator-activated receptor (PPAR) is a ligand-activated transcription factor, including PPAR α , PPAR β and PPAR γ . PPAR γ has tight correlations with pregnancy, besides some common functions PPARs have, including anti-inflammatory, metabolic regulation and cell differentiation. This article reviews the importance of PPAR γ for pregnancy from the distribution in the placenta, the important role in the placental development including trophoblastic differentiation, invasion and placental fatty metabolism, and the relationship with parturition and pathological pregnancy.

Key words: peroxisome proliferator-activated receptor γ (PPAR γ); pregnancy; placenta; trophocyte

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胰岛素样生长因子系统在胎儿生长发育中的作用

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【摘要】 胰岛素样生长因子(insulin-like growth factors, IGFs)作为一类多功能的促生长调节因子, 在细胞的增殖、分裂以及个体的生长、发育中具有重要的促进作用。IGFs分为1型和2型, 主要通过IGF-1受体结合, 参与调控妊娠过程中滋养细胞侵袭、物质转运、胎盘血管重塑以及胎儿生长发育等一系列重要生理过程。其中, IGF-1、IGF-2及其相关受体的表达和功能异常可导致胎盘功能不全及胎儿功能生长受限。深入了解IGFs与胎儿生长发育之间的关系对研究胎盘功能代谢、物质转运、胎儿生长发育等具有重要意义。

关键词: 胰岛素样生长因子(IGF); 胎盘; 胎儿生长发育; 宫内生长受限(FGR)

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Function of Insulin-like Growth Factors (IGF) System in the Fetal Development

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【ABSTRACT】 The insulin-like growth factors (IGFs) are a kind of multi-functional somatotrophic regulatory factors, which play a crucial role in promoting cell proliferation, division and individual growth. Two IGF ligands including IGF-1 and IGF-2 participate in regulating trophoblast invasion, material transportation, placental angiogenesis and fetal development by mainly binding to IGF-1 receptor. Abnormal expression and dysfunction of IGF-1, IGF-2 and their receptors may lead to placenta insufficiency and fetal growth restriction (FGR). Understanding of the relationship between IGFs and fetal development is important for studying the placenta metabolism, material transportation and fetal growth.

Key words: insulin-like growth factor (IGF); placenta; fetal development; fetal growth restriction (FGR)

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甲状腺疾病与女性生殖

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【摘要】 正常的甲状腺功能状态是维持女性生殖能力的一个重要因素; 甲状腺激素直接或间接参与调节女性生殖功能。甲状腺机能障碍会影响性激素结合球蛋白(SHBG)和催乳素(PRL)水平, 从而改变类固醇激素代谢和下丘脑-垂体-卵巢轴的功能, 导致凝血功能障碍和各种生殖问题, 如月经紊乱、排卵障碍、不孕、流产、早产等。甲状腺机能障碍通过适当的临床干预可能恢复正常的月经周期, 并改善生殖功能。

关键词: 甲状腺功能亢进症(HT); 甲状腺功能减退症(HoT); 甲状腺自身免疫; 生殖; 辅助生殖技术(ART)

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Thyroid Diseases and Femal Reproduction

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【ABSTRACT】 Normal thyroid function is essential to maintain the female reproductive ability. Thyroid hormones are directly and indirectly involved in the regulation of female reproductive function. Thyroid dysfunction affects sex hormone binding globulin (SHBG) and prolactin (PRL) levels, alters the metabolism of steroid hormones and the function of hypothalamic-pituitary-ovary axis, and causes coagulation dysfunction, which result in various reproductive problems such as menstrual disorders, ovulation disorder, infertility, abortion, premature birth, etc. Proper clinical intervention may restore the normal menstrual cycle, and improve fertility and the outcome of pregnancy.

Key words: hyperthyroidism (HT); hypothyroidism (HoT); thyroid autoimmunity; reproduction; assisted reproductive technology (ART)

我国口服避孕药的使用现状及影响因素

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【摘要】口服避孕药(oral contraceptives, OC)是人工合成的雌激素和孕激素的复合制剂, 在正确服用的前提下它可保护女性避免意外怀孕。经过50多年的发展和研制, 不断有新型安全的OC问世, 但是全国计划生育数据显示其在我国的使用和推广情况并不理想。本文采用诊断树方法探究深层原因, 得出了改善这一现状的3个关键点: ①倡导群众知情选择多种避孕方式; ②服务对象的知信行模式的提升; ③我国OC服务提供体系的完善。

关键词: 口服避孕药(OC); 使用现状; 影响因素; 诊断树

中图分类号: R169.1

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Current Applied Situation and Influencing Factors of Oral Contraceptives in China

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【ABSTRACT】 Oral contraceptives (OC) are synthetic hormonal preparation consisting of estrogen and progesterone. It can protect women to avoid unwanted pregnancies with correct means of taking the pills. With more than 50 years' development and research, there have been constantly new and more secure OC productions created. However, according to the national family planning data, the application and promotion of the OC were not ideal. In this paper, a diagnostic tree method is used to explore on underlying causes of the above situation. In order to improve this situation there are three key points: firstly, we need change the pattern of contraceptive measures; secondly, the knowledge-attitude-practice mode (KAP) of serving objects needs to be enhanced; thirdly, it's time to improve the national OC service system.

Key words: oral contraceptives (OC); applied situation; influencing factors; diagnostic tree

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• 研究简讯 •

模拟分娩损伤及绝经对压力性尿失禁模型大鼠 尿道周围结缔组织转化生长因子 β 1 和弹性蛋白表达的影响

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【摘要】目的: 探讨模拟分娩损伤及绝经对压力性尿失禁(SUI)模型大鼠尿道周围结缔组织转化生长因子 β 1(TGF β 1)和弹性蛋白(elastin)表达的影响。方法: 51只雌性SD大鼠随机分为3组: 阴性对照组(正常未孕大鼠)、阳性对照组(分娩组)、SUI组(分娩、模拟产伤、卵巢去势), 造模前和处死前均行尿道动力学检测, 术后4周处死大鼠, 收集大鼠尿道周围结缔组织进行常规石蜡切片、HE染色、弹性纤维特殊染色, 免疫荧光实验和Western blotting方法检测各组尿道周围结缔组织TGF β 1和弹性蛋白的蛋白表达情况。结果: SUI组最大膀胱容量和漏尿点压力明显较阳性对照组和阴性对照组下降(P 均 <0.01)。弹性纤维特殊染色显示阴性对照组和阳性对照组弹性纤维完整致密, SUI组弹性纤维较对照组减少、稀疏、变细(P 均 <0.01)。Western blotting检测结果显示阴性对照组和阳性对照组尿道周围结缔组织均见TGF β 1和弹性蛋白的高表达, 2个对照组间比较差异均无统计学意义(P 均 >0.05)。SUI组在造模后4周TGF β 1和弹性蛋白的表达均较对照组明显下降(P 均 <0.01)。结论: 尿道周围结缔组织弹性纤维的破坏和缺失可能与SUI的发生关系密切, 弹性蛋白和TGF β 1的减少可能共同参与了SUI的发生、发展。

关键词: 压力性尿失禁(SUI); 弹性纤维; TGF β 1; 弹性蛋白

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Impact of Analog Birth Injuries and Post-menopausal on the Expression of TGF-beta1 and Elastin in Periurethral Connective Tissue of Stress Urinary Incontinence Rat Models

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【ABSTRACT】 Objective: To investigate the impact of analog birth injuries and post-menopausal on the TGF-beta 1 (TGF-β1) and elastin expression in urethral connective tissue of stress urinary incontinence (SUI) rat models. **Methods:** Totally 51 female SD rats were randomly divided into three groups: negative control group (normal non-pregnant rats), positive control group (delivery group) and SUI model group (childbirth, analog birth trauma, ovariectomized). Urethra dynamics detection was done before the SUI model was made and the rats were sacrificed. The rats were sacrificed 4 weeks after the surgery. The rat periurethral connective tissue was made into paraffin section. HE staining, special staining of elastic fibers, immunofluorescence assay and Western blotting were used to detect the protein expression of TGF-β1 and elastin. **Results:** SUI group's max bladder capacity and leak point pressure were significantly lower than those in the positive control group and the negative control group ($P<0.01$). Special staining of elastic fibers of the two control groups were complete and dense, while SUI group's were few and sparse ($P<0.01$). Western blotting test results showed that both in the negative control group and the positive control group, TGF-β1 and elastin showed high expression in the periurethral connective tissue. Between the two control groups, the difference was not statistically significant ($P>0.05$). Four weeks after modeling, SUI group's TGF-β1 and elastin expression was decreased significantly compared with the control ($P<0.01$). **Conclusion:** Destruction of elastic fibers of the connective tissue around the urethra and deletions may be closely related to the occurrence of SUI. Declines in elastin and TGF-β1 levels may be jointly involved in the occurrence and development of SUI.

Key words: stress urinary incontinence (SUI); elastic fibers; TGF-β1; elastin

• 现场调查 •

广州市流动育龄妇女预防出生缺陷知识知晓 现状及影响因素分析

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【摘要】目的: 为有针对性地对广州市流动育龄妇女出生缺陷预防知识宣传教育的开展提供科学依据。方法: 在广州市白云区整群抽取1 003名流动育龄妇女进行匿名问卷调查。结果: 广州市流动育龄妇女出生缺陷预防知识知晓率约为49.29%, 本次研究共25题, 答对 ≥ 15 题为及格者占46.46%。Logistic回归分析表明, 城镇户口、已婚流动育龄妇女出生缺陷预防知识知晓率高于农村户口、未婚妇女; 文化程度越高、平均月收入越多的流动育龄妇女出生缺陷预防知识知晓率越高。结论: 广州市流动育龄妇女出生缺陷预防知识知晓现状不容乐观, 需加强对文化程度低、未婚及农村户口的流动育龄妇女人群进行优生优育知识的宣传教育。

关键词: 流动育龄妇女; 预防出生缺陷知识; 影响因素

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Status and Influencing Factors on Knowledge of Birth Defect Prevention among Floating Women of Childbearing Age in Guangzhou

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【ABSTRACT】 Objective: To investigate the status and influencing factors on knowledge of birth defect prevention among floating women of childbearing age in Guangzhou, and to provide scientific bases for carrying out the intervention measures aimed at them. **Methods:** A face to face questionnaire investigation was conducted among a randomized cluster sampling of 1 003 floating women in Baiyun District of Guangzhou. **Results:** The awareness rate of knowledge of birth defect prevention was 49.29%, and the pass rate was only 46.46%. The results of Logistic regression model showed that the knowledge rates of urban and married women were higher than those of rural and unmarried women, respectively. Moreover, women with higher education level and average monthly income had higher knowledge rate. **Conclusion:** The awareness status on knowledge of birth defect prevention among floating women of childbearing age was rather worrying. Information education about eugenics knowledge should be carried out among women who are unmarried, poorly educated and rural household registration.

Key words: floating women of childbearing age; knowledge of birth defect prevention; influencing factors

• 临床报道 •

200例短效长方案ICSI助孕周期 注射hCG时机的探讨

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【摘要】目的: 探究不同时点注射人绒毛膜促性腺激素(hCG)行短效长方案卵泡质内单精子注射(ICSI)助孕术患者的临床结局影响。方法: 回顾性分析行ICSI助孕术的200例患者, 按传统标准的hCG注射日时间(有3个卵泡平均直径 ≥ 17 mm)比较推迟2 d(+2组, $n=167$)、推迟3 d(+3组, $n=31$)和推迟4 d(+4组, $n=2$)ICSI助孕过程中的临床参数及妊娠结局。结果: +3组与+2d组比较, 平均直径 ≥ 20 mm的卵泡数有上升趋势(6.1 ± 2.4 vs 5.4 ± 2.3); hCG注射日最大卵泡的平均直径达到 25.0 ± 2.6 mm, 两者有统计学差异($P < 0.05$); ≥ 20 mm/ ≥ 14 mm比值组间差异更大(0.52 ± 0.16 vs 0.46 ± 0.13 , $P < 0.05$), $P \times 1000/E_2$ 有降低趋势(0.23 ± 0.12 vs 0.42 ± 1.44), $E_2/\geq 14$ mm的卵泡数比值有上升趋势(276.73 ± 93.55 vs 246.23 ± 77.03)。卵子回收率、M_{II}卵率、受精率、优质胚胎率、周期取消率、着床率、临床妊娠率、自然流产率、宫外孕率及OHSS发生率均无统计学差异($P > 0.05$)。结论: 对短效长方案患者适度推迟注射hCG时间是值得推行的。

关键词: 注射hCG时机; 短效长方案; ICSI; 控制性超促排卵(COH)

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Exploration of 200 ICSI Cycles Using Short Gonadotropin-releasing Hormone Agonist (GnRH-a) Protocols on the Timing of hCG Injection

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【ABSTRACT】 Objective: To investigate the influence of different timing of human chorionic gonadotropin (hCG) injection for ICSI patients in short gonadotropin-releasing hormone agonist (GnRH-a) protocols. **Methods:** Participants included 200 women undergoing ICSI cycles were retrospectively analyzed. According to the traditional standard of hCG injection time when there were ≥ 3 follicles with the diameter of ≥ 17 mm, all the patients were divided into delayed by 2 d group (+ 2 group, $n=167$), delayed by 3 d group (+ 3 group, $n=31$) and delayed by 4 d group (+ 4 group, $n=2$). Clinical parameters and pregnancy outcome were measured and compared. **Results:** The maximum follicular diameter on hCG injection day was bigger (25.00 ± 2.55 mm vs 23.96 ± 2.21 mm, $P=0.037$) in delayed by 3 d group. And in delayed by 3 d group the ratio of ≥ 20 mm/ ≥ 14 mm was large (0.52 ± 0.16 vs 0.46 ± 0.13), there was a trend towards a slight increase for follicular number with the diameter of ≥ 20 mm (6.1 ± 2.4 vs 5.4 ± 2.3) and E_2 /No. of oocytes with diameter ≥ 14 mm (276.73 ± 93.55 vs 246.23 ± 77.03) on hCG injection day, at the same time there was a decreased trend in $P \times 1000/E_2$ (0.23 ± 0.12 vs 0.42 ± 1.44). There was no statistical significance for number of oocytes retrieved, second meiosis oocytes, fertilization rate, high-quality embryo rate, cycle cancellation rate, implantation rate, clinical pregnancy rate, spontaneous abortion rate, ectopic pregnancy rate and OHSS incidence. **Conclusion:** It is feasible of mild delaying the time of hCG injection for ICSI patients in short GnRH-a protocols.

Key words: hCG injection timing; short gonadotropin-releasing hormone agonist (GnRH-a) protocols; ICSI; controlled ovarian hyperstimulation (COH)

我院育龄妇女血清睾酮水平正常值范围的修正 及其对PCOS诊断的影响

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【摘要】目的: 修正高雄激素血症的诊断标准, 并分析其对PCOS诊断标准的影响。方法: 以3 545例无排卵障碍和无内分泌疾病的育龄妇女为正常排卵组, 测定其睾酮(T)水平, 并根据测定值修正T水平的正常值范围, 按修正的正常值范围通过1 248例PCOS患者分析其对PCOS诊断及分型的影响。结果: ①正常排卵组和PCOS组的年龄、FSH、E₂组间比较差异无统计学意义($P>0.05$), 而BMI、LH、T组间比较差异有统计学意义($P<0.05$)。根据正常排卵组的T水平确定其正常值范围为 $0.27 \pm 0.23(0.04\sim 0.50)$ ng/ml, 修正后 $T>0.65$ ng/ml即可诊断为生化高雄激素血症。②修正雄激素的正常值范围后, PCOS组高雄激素血症的比例有明显提高, PCOS 4个亚型构成比有变化, 有359例II型PCOS患者转为I型PCOS。结论: 我院育龄女性雄激素水平的正常值范围需要修正, 修正的雄激素正常值范围对PCOS的诊断及分型有影响。

关键词: 育龄女性; PCOS; 高雄激素血症; 正常值范围

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Amended the Normal Range of Serum Testosterone Level in Women of Reproductive Age and Its Impact on the PCOS Diagnosis in Our Hospital

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【ABSTRACT】 Objective: To amend the diagnostic criteria of hyperandrogenism and analyze the impact on the PCOS diagnosis. **Methods:** A total of 4 793 infertility women were divided into normal ovulation group ($n=3\ 545$) and PCOS group ($n=1\ 248$). The normal range of serum testosterone (T) level was amended according to the normal ovulation group, and the impact on diagnosis of PCOS and its subtypes were analyzed. **Results:** 1) There were no significant differences in age, FSH, E_2 between normal ovulation group and PCOS group ($P>0.05$), and there were significant differences in BMI, LH, T between the two groups ($P<0.05$). Amended the normal range of T level in normal ovulation group [0.27 ± 0.23 (0.04–0.50) ng/ml], $T>0.65$ ng/ml was the diagnostic criteria of hyperandrogenism. 2) The hyperandrogenism ratio increased in PCOS group according to the amended T level, the proportion of four subtypes PCOS changed, there were 359 type II PCOS patients changed into type I. **Conclusion:** The normal range of androgen level in reproductive women in our hospital need to be amended, and it affects the diagnosis of PCOS and its subtypes.

Key words: women of reproductive age; PCOS; hyperandrogenism; normal range