

• 实验研究 •

# 蛋白激酶B(PKB/AKT)在小鼠卵母细胞减数分裂恢复过程中对CDC25B定位及表达的影响

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**【摘要】**目的: 探讨蛋白激酶B(PKB/AKT)在小鼠卵母细胞减数分裂恢复过程中对CDC25B定位及表达的影响。方法: 使用激光共聚焦显微镜观察AKT对CDC25B定位的影响; Western blotting方法检测CDC25B在AKT mRNA显微注射卵母细胞中的表达改变。结果: CDC25B主要位于GV期卵母细胞的细胞核和GVBD期卵母细胞的细胞膜, 然而当使用AKT的抑制剂处理卵母细胞时CDC25B的分布一直停留在细胞核; 在AKT mRNA显微注射组, CDC25B的表达在GVBD期明显增加。结论: AKT在小鼠卵母细胞减数分裂的恢复过程中可以调节CDC25B的定位及表达。

**关键词:** 蛋白激酶B (PKB/AKT); 减数分裂; 小鼠卵母细胞

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## Effect of protein kinase B (PKB/AKT) on the localization and expression of cell division cycle 25 homolog B (CDC25B) during the meiotic resumption of mouse oocytes

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**【ABSTRACT】 Objective:** To study the effect of protein kinase B (PKB/AKT) on localization and expression of cell division cycle 25 homolog B (CDC25B) during meiotic resumption of mouse oocytes. **Methods:** The localization of CDC25B was observed with confocal laser scanning microscopy. Expressive change of CDC25B in mouse oocytes microinjected with *AKT* mRNA was detected by Western blotting. **Results:** CDC25B located mainly in nucleus of GV oocytes and in cytomembrane of germinal vesicle breakdown (GVBD) oocytes. However, the distribution of CDC25B was still in nucleus when oocytes were treated by AKT inhibition. The level of CDC25B was increased in microinjection group of *AKT* mRNA. **Conclusion:** AKT may regulate the localization and expression of CDC25B during meiotic resumption of mouse oocytes.

**Key words:** protein kinase B (PKB/AKT); meiosis; mouse oocytes

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# 小鼠慢性输卵管炎症不孕模型制作

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**【摘要】**目的: 探索制作慢性输卵管炎致不孕模型。方法: 小鼠阴道内接种  $1 \times 10^9$ /ml 金黄色葡萄球菌, 选取不同时间点检测肿瘤坏死因子  $-\alpha$ (TNF- $\alpha$ ) 的表达, 并观察输卵管病理学改变和受孕情况。结果: 各模型组 TNF- $\alpha$  表达显著高于相应正常对照组 ( $P < 0.001$ )。造模 28 d, 输卵管黏膜上皮细胞大部分坏死, 可见裸露细胞核, 黏膜皱襞基本消失, 管腔极度增大, 纤毛完全脱落。造模 28 d 受孕率与相应正常对照组有极显著统计学差异 ( $P < 0.001$ )。结论: 阴道内接种  $1 \times 10^9$ /ml 金黄色葡萄球菌, 28 d 可成功建立小鼠慢性输卵管炎性不孕模型。

**关键词:** 金黄色葡萄球菌; 不孕; 肿瘤坏死因子  $-\alpha$ (TNF- $\alpha$ ); 慢性输卵管炎; 模型

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## Modeling chronic salpingitis infertility in mice

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**【ABSTRACT】 Objective:** To establish an infertile mouse model caused by chronic salpingitis. **Methods:** After the vaginally injection of staphylococcus aureus ( $1 \times 10^9$ /ml) in mouse, the expression of tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) was detected at difference time, and mouse oviduct inflammatory pathology changes and fertile situation were observed. **Results:** TNF- $\alpha$  expression of model group was significantly higher than that in control group ( $P < 0.001$ ). Modeling 28 d, most oviduct epithelial cells died, showing bare nuclei, oviduct mucosal disappeared, the lumen increased extremely, cilia had disappeared completely off. Modeling 28 d, between model group and the corresponding control group, the pregnancy rate was significantly different ( $P < 0.001$ ). **Conclusion:** TNF- $\alpha$  expression in model group was significantly higher than that in the corresponding control group ( $P < 0.05$ ). An infertile mouse model caused by chronic salpingitis can be established in 28 d by vaginally injection of  $1 \times 10^9$ /ml staphylococcus aureus.

**Key words:** staphylococcus aureus; infertility; tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ); chronic salpingitis; model

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# HPV58型E2蛋白表达纯化与多克隆抗体制备

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**【摘要】**目的: 表达纯化重组人乳头瘤病毒(human papillomavirus, HPV)58型E2蛋白, 制备多克隆抗体。方法: 构建重组质粒 pET-28b-E2, 转化至 BL21(DE3)pLysS 中诱导表达, 包涵体洗涤后经镍柱亲和层析分离得到纯化目的蛋白。用纯化的重组E2蛋白免疫新西兰白兔, 制备兔抗HPV58型E2蛋白多克隆抗体, ELISA分析多克隆抗体的效价, 免疫印迹检测抗体的特异性。结果: 表达纯化了重组HPV58型E2蛋白, 制备了高滴度和高特异性的多克隆抗体。结论: 制备的多克隆抗体可用于对HPV58型E2蛋白进行精细B细胞线性表位鉴定。

**关键词:** HPV58型E2蛋白; 蛋白表达; 包涵体纯化; 抗体制备

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## Expression and purification of HPV58 E2 protein and preparation of polyclonal antibodies against HPV58 E2 protein

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**【ABSTRACT】 Objective:** To express and purify recombinant E2 protein of human papillomavirus (HPV) 58 and to obtain polyclonal antibodies against HPV58 E2 protein. **Methods:** The constructed recombinant plasmid pET-28b-E2 was transformed into BL21(DE3) pLysS and recombinant E2 protein expression was induced. Recombinant E2 protein was purified by nickel column affinity chromatography after inclusion body being washed. Immunizing New Zealand white rabbits with purified recombinant E2 protein, rabbit anti-HPV58 E2 polyclonal antibodies were prepared. After then, the polyclonal antibodies titer were analyzed by ELISA and the polyclonal antibodies specificity to recombinant E2 protein was detected through Western blotting. **Results:** We successfully expressed and purified recombinant HPV58 E2 protein and prepared the polyclonal antibodies of high titer and high specificity to recombinant E2 protein. **Conclusion:** The polyclonal antibodies can be used to further identify exquisite linear B-cell epitopes of HPV58 E2 protein.

**Key words:** HPV58 E2 protein; protein expression; inclusion body purification; preparation of polyclonal antibodies

• 临床研究 •

## 子宫内膜厚度差预测IVF-ET妊娠结局 的临床观察

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**【摘要】**目的: 探讨hCG注射日子宫内膜上段和中段2个测量点的厚度之差与体外受精-胚胎移植(IVF-ET)妊娠结局之间的相关关系。方法: 对初次接受IVF-ET治疗的256例患者, 在hCG注射日行阴道超声测量子宫内膜最大厚度、上段厚度(距宫底10 mm处)、中段厚度(距宫底20 mm处)、上中段内膜差(ETD, 即上段厚度-中段厚度)。根据ETD将患者分为4组: A组(ETD<0 mm); B组(ETD 0~2.0 mm); C组(ETD 2.1~4.0 mm); D组(ETD>4.0 mm), 然后以年龄35岁为界将患者分为2个亚组:  $\geq 35$ 岁和<35岁, 比较各组的临床妊娠率、胚胎着床率和继续妊娠率。结果: 年龄<35岁患者总的临床妊娠率为59.16%, 4组胚胎着床率分别是39.3%、38.3%、51.2%和27.5%, 4组之间有统计学差异( $P=0.0386$ )。4组的临床妊娠率为59.1%、60.6%、67.7%和45.0% ( $P=0.525$ ); 继续妊娠率为52.3%、50.0%、54.1%和30.0%, C组高于其余各组, 但无统计学差异( $P=0.296$ )。年龄 $\geq 35$ 岁患者临床妊娠率为43.8%, 较<35岁者低, 且不同ETD组间各种观察数据无统计学差异( $P>0.05$ )。结论: 年轻患者ETD在2.1~4.0 mm范围时可能预示更佳的妊娠结局。

**关键词:** 子宫内膜容受性; 体外受精(IVF); 子宫内膜厚度; 子宫内膜差(ETD); 妊娠结局

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## Clinical observations of endometrial thickness difference for predicting pregnancy outcome in *in-vitro* fertilization cycles

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**【ABSTRACT】 Objective:** To evaluate the relationship between endometrial thickness difference on human chorionic gonadotropin trigger day and *in-vitro* fertilization (IVF) outcome. **Methods:** The prospective cohort study recruited 256 standard patients in their first IVF cycles stimulated. On the day of trigger, endometrial thickness was measured at three points on longitude segment, which were 10 mm and 20 mm from uterine fundus and the maximum endometrial thickness on longitude segment. All cases were divided into 4 groups according to endometrial thickness difference (ETD), group A: ETD<0 mm, group B: ETD 0–2.0 mm, group C: ETD 2.1–4.0 mm, group D: ETD>4.0 mm. Then patients were divided into <35 years old subgroup and  $\geq$  35 years old subgroup, the of pregnancy rate and the implantation rate and the ongoing pregnancy rate were compared between the two groups according to different range of EMD. **Results:** Among patients <35 years old, the implantation rate of endometrial thickness difference in group C was significantly higher than those in group A, group B and group D (39.3% vs 38.3% vs 51.2% vs 27.5%,  $P=0.0386$ ). The clinical pregnancy rate and the ongoing pregnancy rate of ETD in group C were higher than those in other three groups even without statistic difference (59.1% vs 60.6% vs 67.7% vs 45.0%,  $P=0.525$ ; 52.3% vs 50.0% vs 54.1% vs 30.0%,  $P=0.296$ ). **Conclusion:** The younger person with ETD between 2.1–4.0 mm may have favour pregnancy.

**Key words:** endometrial receptivity; *in-vitro* fertilization (IVF); endometrial thickness; endometrial thickness difference (ETD); pregnancy outcome

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## 两种微刺激方案在卵巢低反应患者中的应用

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**【摘要】**目的: 探讨卵巢低反应(poor ovarian response, POR)患者在体外受精/卵胞质内单精子显微注射-胚胎移植(IVF/ICSI-ET)技术中应用微刺激方案更合适的取卵时机。方法: 回顾性分析接受微刺激方案IVF/ICSI-ET助孕的POR患者共363个周期的临床资料, 分为来曲唑(LE)+尿促性腺素(hMG)+后半程氯米芬片(CC)组(A组)和全程CC+hMG组(B组)。观察分析临床及实验室指标、不同取卵时机获卵情况及后续冻融胚胎移植(FET)周期的妊娠结局。结果: 患者的Gn使用天数、扳机日E<sub>2</sub>、取卵前日E<sub>2</sub>、M<sub>II</sub>卵率组间比较差异均有统计学意义( $P < 0.05$ )。取卵前日E<sub>2</sub>与扳机日E<sub>2</sub>相比上升者注射达菲林后33 h取卵获卵情况要差于35 h和36 h取卵者( $P < 0.05$ ), 而取卵前日E<sub>2</sub>与扳机日E<sub>2</sub>相比下降者, 下降比例 $\leq 1/3$ 者获卵率要明显优于 $> 1/3$ 者( $P < 0.05$ )。结论: POR患者应用微刺激方案时, 取卵前日E<sub>2</sub>与扳机日E<sub>2</sub>相比, 上升者, 可注射达菲林后35~36 h取卵; 下降者, 下降比例 $\leq 1/3$ , 可33 h取卵, 如下降比例 $> 1/3$ , 则提示33 h后取卵获卵情况差。

**关键词:** 微刺激方案; 来曲唑 (LE); 氯米芬 (CC); 卵巢低反应 (POR); 取卵时机

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## Clinical analysis for application of two mini-stimulation protocols on patients with poor ovarian response

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**【ABSTRACT】 Objective:** To explore a more appropriate ovarian stimulation protocol for the poor ovarian response (POR) patients in *in vitro* fertilization/intracytoplasmic sperm injection and embryo transfer (IVF/ICSI-ET). **Methods:** A retrospective study was performed in 363 POR patients undergoing the treatment of mini-stimulation protocols IVF/ICSI-ET. The patients were divided into letrozole (LE)+hMG+clomifene (CC) later taken group (group A) and CC in the whole process+hMG group (group B). The clinical and laboratory data, oocytes retrieval situation in different time and pregnancy outcome of subsequent frozen-thawed embryo transfer (FET) cycle were compared between the two groups. **Results:** Of the Gn used days, serum E<sub>2</sub> on the trigger day, serum E<sub>2</sub> on the day before oocyte retrieval day and M<sub>II</sub> oocyte rate, there were significant differences ( $P<0.05$ ) between the two groups. For patients whose serum E<sub>2</sub> level ascended from the trigger day to the day before oocyte retrieval day, the status of retrieving transvaginal oocyte 33 h after triptorelin administered was worse than 35 h and 36 h ( $P<0.05$ ). For patients whose serum E<sub>2</sub> level descended, the retrieved oocyte rate in the group of descending proportion equal or less than one third was better than that in the group of descending proportion more than one third. **Conclusion:** In POR patients treated with mini-stimulation protocol, comparing the serum E<sub>2</sub> level on the day before oocyte retrieval day with the trigger day, when it ascends, transvaginal oocyte retrieved can be performed 35–36 h after triptorelin administered; when it descends and the proportion is less than one third, transvaginal oocyte retrieved can be performed 33 h after triptorelin administered; if the proportion is more than one third, it prompts that the situation is worse.

**Key words:** mini-stimulation protocol; letrozole (LE); clomifene (CC); poor ovarian response (POR);  
oocyte retrieval time

# 米非司酮预防功能失调性子宫出血宫腔镜 术后复发的临床观察

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**【摘要】**目的: 探讨米非司酮预防功能失调性子宫出血(dysfunctional uterine bleeding, DUB)宫腔镜子宫内膜电切术(transcervical resection of endometrium, TCRE)后复发的临床疗效。方法: 选择诊断为DUB、具有宫腔镜手术指征的患者60例。所有患者术前3个月内行诊断性刮宫术, 并经子宫内膜病理检查排除恶性病变。将研究对象随机分为研究组和对照组, 各30例, 给予TCRE治疗。研究组在术后第1日起, 口服米非司酮, 剂量为12.5 mg/d, 持续3个月, 对照组不给予药物处理。术后1个月、3个月、6个月观察患者的月经情况、血红蛋白(Hb)、子宫内膜厚度及手术疗效。结果: 研究组患者术后3个月内均闭经, 停药后3例患者出现月经复潮, 经量较术前明显减少; 对照组术后22例闭经, 8例月经复潮, 其中3例月经量与术前相当; 研究组和对照组术后的平均Hb量均较术前上升, 组间相比差异无统计学意义( $P>0.05$ ); 研究组术后子宫内膜平均厚度低于术前和对照组, 差异有统计学意义( $P<0.05$ )。结论: DUB患者TCRE后辅助口服米非司酮可减少患者月经量, 甚至导致闭经, 预防DUB复发, 提高宫腔镜手术治疗的效果。

**关键词:** 米非司酮; 宫腔镜; 子宫内膜电切术(TCRE); 功能失调性子宫出血(DUB); 复发

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## Clinical investigation of transcervical resection of endometrium combined with mifepristone in preventing postoperative recurrence of dysfunctional uterine bleeding

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**【ABSTRACT】 Objective:** To explore the clinical efficacy of transcervical resection of the endometrium (TCRE) combined with mifepristone in preventing recurrence of dysfunction uterine bleeding (DUB). **Methods:** A total of 60 patients with DUB hysteroscope operational indication were divided into control group ( $n=30$ ) and study group ( $n=30$ ). All patients with malignant endometrium diseases were excluded by diagnostic curettage within 3 months before operation; the control group were treated with TCRE, the study group were given TCRE combined with postoperative mifepristone administration of oral 12.5 mg/d for 3 months. The menstruation, anemia, clinical efficacy and endometrial thickness on time points of 1 month, 3 months and 6 months after operation were evaluated for the two groups. **Results:** All cases in the study group were amenorrhea within 3 months after operation, menstruation of 3 cases recurred after discontinuation of mifepristone, but with less menstrual blood volume than that before operation; 22 cases of the control were amenorrhea, menstruation of 8 cases recurred after discontinuation of mifepristone, 3 cases of which had equivalent volume of blood. The average haemoglobin (Hb) of the two groups both rose after operation. Average thickness of postoperative endometrium maintained significantly less than that of both preoperation in study group and control group ( $P<0.05$ ). **Conclusion:** TCRE combined with postoperative mifepristone medication can decrease menstrual blood volumes greatly, even cause amenorrhea, prevent recurrence of DUB, and improve efficacy of TCRE.

**Key words:** mifepristone; hysteroscope; transcervical resection of endometrium (TCRE); dysfunction uterine bleeding (DUB); recurrence

# 绝经后无症状子宫内膜增厚患者临床病理分析

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**【摘要】**目的: 探讨绝经后妇女B超检查显示子宫内膜增厚而无症状者的子宫内膜病理变化。方法: 对绝经后B超显示子宫内膜增厚无症状患者(无症状组)及同期绝经后B超显示子宫内膜增厚伴有阴道出血者(出血组)进行诊断性刮宫与病理检查结果比较。结果: 无症状组子宫内膜增厚的86例患者中, 非器质性病变44例(51.16%), 良性病变42例(48.84%), 无恶性及癌前病变; 出血组子宫内膜增厚的79例中, 非器质性病变48例(60.76%), 良性病变17例(21.52%), 恶性14例(17.72%)。无症状组随着年龄增大、绝经年限延长、内膜厚度增加, 其良性病变呈上升趋势( $P < 0.05$ ); 出血组随着年龄增大、绝经年限延长、内膜厚度增加, 其恶性病变呈上升趋势( $P < 0.05$ ); 其中无症状绝经后妇女B超示子宫内膜增厚者中内膜病变与内膜厚度和体质量指数(BMI)相关。结论: 绝经后子宫内膜增厚不伴阴道出血时, 多为良性病变, 对于肥胖、内膜厚及绝经年龄较长患者更应重视。绝经后子宫内膜增厚伴有阴道出血时, 恶性病变比例显著升高。

**关键词:** 绝经; 子宫出血; 子宫内膜增厚; 超声检查; 病理学

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## Clinical and pathologic study on asymptomatic postmenopausal women with abnormal endometrial thickening

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**【ABSTRACT】 Objective:** To evaluate the relationship between abnormal endometrial thickening and endometrial diseases in asymptomatic postmenopausal women and to make strategy of treatment. **Methods:** Totally 86 asymptomatic postmenopausal women and 79 postmenopausal vaginal bleeding women with abnormal endometrial thickening in transvaginal ultrasound scanning were collected for fractional curettage of uterus and pathologic analysis. **Results:** Among 86 asymptomatic postmenopausal women with endometrial thickness  $\geq 4$  mm, there were 44 women with non-organic pathological change, 42 women with benign diseases, none with cancer; Among 79 postmenopausal women of vaginal bleeding with endometrial thickness  $\geq 4$  mm, there were 48 women with non-organic pathological change, 17 women with benign diseases, and 14 women with cancer. The incidences of benign diseases increase with age, menopausal period, and endometrial thickness in asymptomatic postmenopausal women ( $P < 0.05$ ), however, the incidences of malignant diseases increased significantly in postmenopausal vaginal bleeding women ( $P < 0.05$ ). Among the asymptomatic postmenopausal women, endometrial diseases were correlated to the endometrial thickness and body mass index (BMI). **Conclusion:** Most endometrial pathologies are benign diseases in asymptomatic postmenopausal women with abnormal endometrial thickening. We should focus on asymptomatic postmenopausal women with obese, endometrial thickening and older women. The incidences of malignant diseases increase significantly in the postmenopausal women of vaginal bleeding with endometrial thickening.

**Key words:** menopause; uterine hemorrhage; ultrasonography; endometrium; pathology

# 接受体外受精-胚胎移植治疗的男性其心理 状况及治疗结局影响因素分析

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**【摘要】**目的: 探讨接受体外受精-胚胎移植(IVF-ET)治疗的男性其发生焦虑、抑郁情绪情况以及治疗结局的影响因素。方法: 随机抽取200名接受IVF-ET治疗的男性患者, 在治疗周期的第1日完成自行设计的问卷, 焦虑自评量表(SAS)、抑郁自评量表(SDS)、Olson-婚姻质量问卷的3个分量表, 了解婚姻满意度, 夫妻交流, 性生活情况。结果: 接受IVF-ET男性抑郁发生率达49%, 焦虑发生率达27%; 焦虑、抑郁得分较高者IVF妊娠失败比例较高( $P<0.001$ ); 婚姻满意度、夫妻交流、性生活得分值较低的患者IVF妊娠失败比例较高( $P<0.001$ ); Logistic回归分析结果显示, 人均住房面积、父母对IVF治疗态度、舆论影响、婚姻满意度、抑郁情绪与治疗结局相关。结论: 焦虑和抑郁情绪普遍存在于接受IVF-ET治疗的男性患者中, 且与妊娠结局有关。因此, 不孕生殖中心医务人员对接受IVF-ET治疗的男性在治疗过程中进行心理支持尤为重要。

**关键词:** 抑郁; 焦虑; 男性; 体外受精-胚胎移植(IVF-ET); 结局

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## A study on men undergoing *in vitro* fertilization and embryo transfer treatment: psychological status and influencing factors of its treatment outcome

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**【ABSTRACT】 Objective:** To explore the prevalence of anxiety and depression of men undergoing *in vitro* fertilization and embryo transfer (IVF-ET) and influencing factors of IVF-ET treatment. **Methods:** A total of 200 men for IVF treatments were invited to join this study by randomize sampling method. All men completed Self-Designed questionnaire, Self-Rating Anxiety Scale (SAS), Self-Rating Depression Scale (SDS), Olson Marital inventory (three subscales) at the first day of IVF treatment cycle. **Results:** The overall prevalence of depression was 49% and anxiety was 27% for men undergoing IVF treatment. The findings showed that higher men's depression and anxiety scores correlated with IVF failure ( $P<0.001$ ) at first day of IVF treatment cycle; lower scores of "satisfaction of marriage", "communication between husband and wife" and "sexual relationship" correlated with IVF failure ( $P<0.001$ ). The results from the Logistic regression analysis indicated that attitude toward IVF treatment, influence on public opinion, marital satisfaction and depression were correlated with treatment outcome ( $P<0.001$ ). **Conclusion:** In a sample of men undergoing IVF treatment, depression and anxiety commonly exist. Greater psychological pressure negatively correlated with pregnancy outcome. Therefore, this study suggests that for medical worker of reproductive infertility center, it is important to provide psychological intervention and support to male patients when IVF treatment is being received.

**Key words:** depression; anxiety; men; *in vitro* fertilization and embryo transfer (IVF-ET); outcome

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• 综述 •

## 卵母细胞滑面内质网聚集体与辅助生殖 妊娠结局关系的研究进展

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**【摘要】**在人类辅助生殖中, 经促排卵体外获得的卵母细胞中, 有滑面内质网聚集体(smooth endoplasmic reticulum clusters, sERC)形成者占有一定比例。这些卵母细胞最终发展为非整倍体的比例较高, 影响随后的胚胎发育和妊娠结局。近年来研究显示: 卵母细胞胞质内sERC的形成与多种因素相关, 主要是 $Ca^{2+}$ 浓度变化的影响。大多数学者认为卵母细胞sERC的形成会导致受精率、卵裂率和囊胚形成率降低及胚胎质量的下降, 使得妊娠率显著降低; 然而, 也有多项报道已证实含sERC的卵母细胞可以正常受精并获得后代。因此对于那些临床助孕治疗中获得sERC<sup>+</sup>胚胎或者胚胎数目不足的患者, 移植sERC<sup>+</sup>胚胎或sERC<sup>+</sup>/sERC<sup>-</sup>胚胎不失为胚胎移植的一个选择。

**关键词:** 滑面内质网聚集体(SERC); 人卵母细胞;  $Ca^{2+}$ 浓度; 胚胎发育; 妊娠结局

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## Smooth endoplasmic reticulum clusters in IVF and its impact on clinical outcomes

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**【ABSTRACT】** In the procedure of human assisted reproduction, the cytoplasm of the oocytes obtained from promoting ovulation may appear smooth endoplasmic reticulum clusters (sERC) which assume a definite proportion of the numerous morphological abnormalities. These oocytes could develop into aneuploidy to a scale and affect the embryonic development and pregnancy outcomes consecutively. Whether the sERC<sup>+</sup> embryos could be implanted in the process of assisted reproduction has not been determined. The review is focused on the discoveries about the prognosis of the sERC<sup>+</sup> human oocytes overall the world during the past decades and found that a group of factors have an association with its formation mechanism especially the change of the concentration of Ca<sup>2+</sup>. The majority of the studies suggested that it could lead to the reduction of the fertilization rate, cleavage rate and blastocyst formation rate as well as the reduction of embryonic development and embryo quality, which eventually making the pregnancy rate significantly reduce. Both domestic and foreign researchers, however, have confirmed that the oocytes containing sERC can fertilize normally and develop into a healthy baby. In this review, for the couples who obtained sERC<sup>+</sup> embryos, implanting sERC<sup>+</sup> embryos or sERC<sup>+</sup>/sERC<sup>-</sup> embryos may be a good option.

**Key words:** smooth endoplasmic reticulum clusters (sERC); human oocytes; Ca<sup>2+</sup> concentration; embryo development; pregnancy outcome

# 年轻早期内膜癌患者保守治疗后的生育结局

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**【摘要】**年轻内膜癌患者中尚未生育的比例高达70%，孕激素及含孕激素宫内节育器(IUD)治疗后的缓解率均较满意(76%~88%)，但复发率也较高，为20%~38%。不同孕激素制剂治疗缓解后的妊娠率为33%~83%，特别是在使用了辅助生殖技术(ART)之后，妊娠率高于等待自然妊娠。在使用ART技术的内膜癌患者中，复发率并未增加。为减少刮宫对内膜的损伤，可6个月诊断性刮宫1次，如果2次内膜正常，则可试孕。复发的中位时间跨度较大，为4~102个月，多报道为24个月。为争取在复发前尽早妊娠，主张积极助孕。完成生育后是否切除子宫，仍有争议。胰岛素抵抗(IR)被认为与内膜癌的发生、发展密切相关，应同时注重IR的评估和改善，这对防止内膜癌复发很有帮助。

**关键词:** 早期子宫内膜癌; 孕激素治疗; 生育结局

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## Reproductive outcomes with progestin therapy in young women with early endometrial carcinoma

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**【ABSTRACT】** More than 70% young women with early endometrial carcinoma didn't give birth. Although the complete response rate was high (76%–88%) in these patients after using the progestin or an intrauterine device (IUD) containing progesterone, the relapse rate were also relative high, about 20%–38%. Six-month was the better interval for dilatation and curettage in order to reduce the endometrial trauma. If the result of endometrial histopathology was normal for twice, the patients could try pregnancy. The clinical pregnancy rate (CPR) was between 33% and 83% after the patients were treated by different kinds of progestin, moreover, the CPR was higher by assisted reproductive technology (ART) than that by expecting natural pregnancy. The median time of relapsing was 4–102 months, 24-month was common. For being pregnant earlier, the patients were recommended to conceive by ART. It was controversial to remove the uterus after delivery. Insulin resistance was considered as a critical high risk factor for endometrial hyperplasia or carcinoma. So, we should pay more attention to the evaluation and management of insulin resistance at the same time.

**Key words:** early endometrial carcinoma; progestin treatment; reproductive outcome

# 半乳凝集素-1在母-胎免疫耐受机制的研究进展

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**【摘要】**正常妊娠的维持有赖于多种因素的参与, 如母-胎免疫耐受、足量的激素支持等, 近年来的研究显示, 半乳凝集素-1可以介导母-胎免疫耐受, 并通过与黄体酮的协同作用参与正常妊娠的维持。而且, 半乳凝集素-1与反复自发性流产(RSA)、子痫前期和妊娠期糖尿病的发生均有关联。对半乳凝集素-1的研究可以帮助我们更加深入地了解正常妊娠与异常妊娠, 从而为妊娠相关疾病的诊断及治疗提供新的研究思路。

**关键词:** 半乳凝集素-1; T细胞分化; 母-胎免疫耐受; 黄体酮; 反复自发性流产(RSA)

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## Research process of galectin-1's effect on the fetal-maternal immunotolerance

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**【ABSTRACT】** Normal pregnancy is attributed to many factors, such as fetal-maternal immunotolerance, abundant hormones and etc. Recent researches find that galectin-1 can regulate fetal-maternal immunotolerance, and cooperate with progesterone to play an important role in maintaining normal gestation. Galectin-1 takes part in the occurrence of recurrent spontaneous abortion (RSA), preeclampsia and gestational diabetes mellitus. Studies about galectin-1 help us to further understand the process of normal and abnormal pregnancy, and provide fresh ideas for the diagnosis and treatment of diseases associated with pregnancy.

**Key words:** galectin-1; T cell differentiation; fetal-maternal immunotolerance; progesterone; recurrent spontaneous abortion (RSA)

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• 临床报道 •

# 辅助生殖与自然受孕双胎妊娠围产结局比较 ——附1524例临床分析

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**【摘要】**目的: 了解辅助生育技术(ART)是否会增加双胎妊娠的产科并发症和围产儿风险。方法: 回顾性分析产前检查及分娩的760例辅助生育受孕双胎孕妇(ART组)和764例自然受孕双胎孕妇(对照组)的妊娠期并发症及新生儿结局。结果: ART组孕妇平均年龄( $32.7 \pm 3.5$ 岁)高于对照组( $30.0 \pm 3.7$ 岁), 差异有统计学意义( $P < 0.05$ ); ART组前置胎盘、产后出血及妊娠期糖尿病发生率高于对照组, 差异有统计学意义( $P < 0.05$ ); ART组择期剖宫产率为85.52%, 高于对照组(80.09%), 其急诊剖宫产导致早产的比例低于对照组, 差异有统计学意义( $P < 0.05$ ); 新生儿出生体质量、新生儿窒息率、先天畸形发生率及新生儿死亡率组间无统计学差异( $P > 0.05$ )。结论: ART在双胎妊娠中会增加前置胎盘、产后出血及妊娠期糖尿病的发生率, 但并不增加其他产科主要并发症及围产儿风险, 因此, 辅助生育受孕双胎孕妇并无预防性减胎的必要。

**关键词:** 双胎妊娠; 辅助生育技术(ART); 自然妊娠; 妊娠结局

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## Comparison of the obstetric and perinatal outcomes of twin pregnancies conceived following assisted reproductive technologies versus conceived spontaneously

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**【ABSTRACT】 Objective:** To find out whether assisted reproductive techniques (ART) further increase the risks of obstetric and perinatal outcomes of twin pregnancies. **Methods:** A retrospective study was carried out to obtain the perinatal complications and neonatal outcomes of twin pregnancies receiving by ART (ART group,  $n=760$ ) and those conceived spontaneously (SC)(control group,  $n=764$ ). **Results:** Women's age in ART group was older than that in control group ( $32.7 \pm 3.5$  years vs  $30.0 \pm 3.7$  years,  $P<0.05$ ). The incidence of placenta previa, postpartum hemorrhage and gestational diabetes were increased in assisted-reproduction twin pregnancies ( $P<0.05$ ). Both groups of pregnant women were likely to choose cesarean section. Cesarean sections were more frequently performed in ART group than that in control group ( $85.52\%$  vs  $80.09\%$ ), but the rate of premature emergency cesarean was lower in ART group, the difference between the two groups was statistically significant ( $P<0.05$ ). There was no statistically significant differences in fetal birth weight, neonatal asphyxia, fetal congenital malformations and neonatal mortality between the two groups ( $P>0.05$ ). **Conclusion:** ART in twin pregnancy will increase the risk of placenta previa, postpartum hemorrhage and gestational diabetes, but not increase other obstetrical complications and perinatal risk. It is not necessary to fetal reduction prevently for patients with assisted reproduction twin pregnancies.

**Key words:** twin pregnancy; assisted reproductive techniques (ART); spontaneous conception; pregnancy outcome



# 原因不明月经过少妇女的临床特征和受孕结局

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**【摘要】**目的: 寻找原因不明月经过少妇女的实验室和临床特征。方法: 110名原因不明月经过少有生育意愿的妇女为研究组及330名月经正常有生育意愿的妇女为对照组, B超观察妇女子宫内膜容受性的临床特征, 如内膜厚度、内膜类型、肌层回声、子宫动脉搏动指数以及内膜血流, 同时测定黄体中期血雌二醇(E<sub>2</sub>)、孕酮(P)水平, 血凝水平和抗体指标, 并对妇女1年内的受孕情况进行随访。结果: 研究组妇女的子宫内膜容受性评分低于对照组(9.41 ± 3.02 vs 15.67 ± 2.63,  $P < 0.01$ ), 黄体中期E<sub>2</sub>水平较低(172.35 ± 27.54 ng/L vs 220.27 ± 30.28 ng/L,  $P < 0.01$ )。研究组1年内自然受孕率低于对照组(60.0% vs 72.1%,  $P < 0.05$ ), 孕早期自然流产率(33.3% vs 12.9%,  $P < 0.01$ )较高。结论: 原因不明月经过少妇女表现为子宫内膜容受性差, 1年内自然受孕率低, 建议在孕前给予黄体功能和子宫内膜容受性的检测。

**关键词:** 月经过少; 子宫内膜容受性; 不孕; 自然流产

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## Clinical characteristics and conception outcome of the women with unexplained hypomenorrhea

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**【ABSTRACT】 Objective:** To investigate the clinical characteristics, conception and early pregnancy outcome of the women with unexplained hypomenorrhea. **Methods:** Totally 110 women with unexplained hypomenorrhea as study group and 330 women as control group were involved. Their endometrial receptivity, such as endometrial thickness, endometrial layer, echo of the uterine muscle, pulse index (PI) of uterine artery, blood in endometrium were observed by ultrasound, and levels of estradiol, progesterone, blood coagulation and antibody in midluteal phase were tested and their conception and early pregnancy outcome within 1 year were followed up. **Results:** The endometrial receptivity score of the women with unexplained hypomenorrhea was significantly lower than that of normal women ( $9.41 \pm 3.02$  vs  $15.67 \pm 2.63$ ,  $P < 0.01$ ), as well as the level of  $E_2$  ( $172.35 \pm 27.54$  ng/L vs  $220.27 \pm 30.28$  ng/L,  $P < 0.01$ ) in midluteal phase. The nature conception rate within 1 year in study group was notably lower ( $60.0\%$  vs  $72.1\%$ ,  $P < 0.05$ ), but spontaneous abortion rate in early pregnancy in study group was notably higher than that in control group ( $33.3\%$  vs  $12.9\%$ ,  $P < 0.01$ ). **Conclusion:** Unexplained hypomenorrhea women have bad endometrial receptivity, and low natural conception with 1 year. It is suggested to administer the examination on corpus function and endometrial receptivity.

**Key words:** hypomenorrhea; endometrial receptivity; infertility; spontaneous abortion

# 207例不孕症妇女焦虑抑郁影响因素分析

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**【摘要】**目的: 研究不孕症女性出现焦虑和抑郁症状的影响因素。方法: 采用自制调查问卷和焦虑自评量表(SAS)、抑郁自评量表(SDS)对207名不孕女性的焦虑抑郁的可能影响因素进行调查。结果: 焦虑症状的危险因素包括年龄( $OR=1.488$ , 95%CI=1.174~1.886)和既往治疗费用( $OR=1.635$ , 95%CI=1.202~1.223); 而居住地为城镇是焦虑症状的保护因素( $OR=0.400$ , 95%CI=0.194~0.825)。抑郁症状的危险因素为不孕年限( $OR=1.532$ , 95%CI=1.315~1.785)和具有较高的文化程度: 高中及中专( $OR=3.227$ , 95%CI=1.578~6.599), 大专及以上( $OR=2.528$ , 95%CI=1.242~5.367)。结论: 年龄、既往治疗费用、居住地、文化程度、不孕年限是不孕妇女焦虑抑郁发生的影响因素。

**关键词:** 不孕; 焦虑; 抑郁

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## Analysis on the influencing factors of anxiety and depression in 207 infertile women

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**【ABSTRACT】 Objective:** To investigate determinants of anxiety and depression levels among infertile women. **Methods:** Anxiety and depression levels of 207 infertile women and related determinants were investigated by using questionnaire, self-rating anxiety scale (SAS) and self-rating depression scale (SDS) methods. **Results:** The risk factors of anxiety level included age ( $OR=1.488$ , 95%CI=1.174–1.886) and treatment cost ( $OR=1.635$ , 95%CI=1.202–1.223), while living in town was the protection factor of anxiety level ( $OR=0.400$ , 95%CI=0.194–0.825). The risk factors of depression level were infertility duration ( $OR=1.532$ , 95%CI=1.315–1.785) and higher education, which included high school ( $OR=3.227$ , 95%CI=1.578–6.599) and college and higher ( $OR=2.528$ , 95%CI=1.242–5.367). **Conclusion:** Age, treatment cost, living conditions, educational background and infertility duration are the influencing factors of anxiety and depression level of infertile women.

**Key words:** infertility; anxiety; depression

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• 个案报道 •

## 3例原发性腹腔妊娠的诊治报道

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**【摘要】**目的: 探讨腹腔妊娠的诊断和治疗原则。方法: 回顾性分析原发性腹腔妊娠3例的诊断和处理。结果: 腹腔妊娠误诊率高, 临床表现不典型, 早期诊断困难, 后果凶险。结论: 腹腔妊娠是产科灾难性事件, 剖腹探查是最重要的治疗方式。

**关键词:** 腹腔妊娠; 诊断; 剖腹探查

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## Report of diagnosis and treatment for three cases with primary abdominal pregnancy

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**【ABSTRACT】 Objective:** To discuss the diagnosis and treatment principles of abdominal pregnancy. **Methods:** Diagnosis and treatment for three cases of primary abdominal pregnancy were retrospectively analyzed. **Results:** With untypical clinical symptoms, abdominal pregnancy was difficult to be diagnosed early. Its rate of misdiagnosis was high and the result was dangerous. **Conclusion:** Abdominal pregnancy is obstetrical catastrophe. Laparotomy is the most important treatment for abdominal pregnancy.

**Key words:** abdominal pregnancy; diagnosis; laparotomy