

# 抗苗勒管激素在腹腔镜单侧卵巢子宫内膜异位囊肿剔除手术中的检测分析

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**[摘要]** **目的** 探讨抗苗勒管激素(AMH)在腹腔镜单侧卵巢子宫内膜异位囊肿手术前后的变化及其意义。**方法** 选择2016-01~2017-06南华大学附属第二医院收治的单侧卵巢子宫内膜异位囊肿患者90例作为观察组, 同期收治的卵巢良性囊肿患者120例为对照组, 均行卵巢囊肿剔除术, 获取术前及术后1周、3个月和6个月的血清AMH检测结果。**结果** 术前观察组患者血清中AMH表达低于对照组( $P < 0.01$ ); 术后两组患者AMH值均下降, 差异有统计学意义( $P < 0.01$ ), 观察组患者术后AMH下降率高于对照组( $P < 0.01$ )。**结论** 卵巢子宫内膜异位囊肿患者AMH降低, 卵巢囊肿剔除术会对卵巢功能产生影响, 术后半年卵巢功能仍处于恢复阶段, 卵巢子宫内膜异位囊肿患者更甚。

**[关键词]** 抗苗勒管激素; 卵巢子宫内膜异位症; 卵巢良性肿瘤; 腹腔镜卵巢囊肿剔除术

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**Detection and analysis of anti-mullerian hormone in laparoscopic unilateral ovarian endometriosis cyst removal** ZHANG Xiao-di. Department of Gynecology and Obstetrics, the Second Affiliated Hospital of University of South China, Hunan 421001, China

**[Abstract]** **Objective** To explore the changes of anti-mullerian hormone (AMH) before and after laparoscopic unilateral ovarian endometriosis cyst removal and its significance. **Methods** 90 patients with unilateral ovarian endometriosis admitted to the Second Affiliated Hospital of University of South China from January 2016 to June 2017 were selected as the observation group, and other 120 patients with benign ovarian cysts as the control group. Both of the two groups were performed the operation of laparoscopic ovarian cyst extirpation. The serum AMH test results were obtained before operation and 1 week, 3 months and 6 months after operation. **Results** The serum AMH expression in the patients of the observation group was significantly lower than that in the patients of the control group ( $P < 0.01$ ). The AMH values decreased after surgery in both groups ( $P < 0.01$ ). The rate of AMH decline in the patients of the observation group was significantly higher than that in the patients of the control group ( $P < 0.01$ ). **Conclusion** AMH is decreased in the patients with ovarian endometriosis. Laparoscopic ovarian cyst extirpation affects the ovarian function. The ovarian function is still in recovery 6 months after surgery, especially in the patients with ovarian endometriosis.

**[Key words]** Anti-mullerian hormone; Ovarian endometriosis; Ovarian benign tumor; Laparoscopic ovarian cyst extirpation

抗苗勒管激素(anti-mullerian hormone, AMH)为二聚体糖蛋白,在女性中仅由卵巢分泌,由窦前卵泡和小窦卵泡产生<sup>[1]</sup>,其主要生理功能是在性腺分化过程中抑制苗勒氏管的发育,是目前外周血中能检测到的最早的卵泡产生的物质<sup>[2]</sup>,且不受月经周期、口服避孕药、促性腺激素释放素等因素干扰<sup>[3]</sup>,因而被广泛用于评价卵巢储备功能<sup>[4-6]</sup>。卵巢良性

肿瘤是女性生殖系统比较常见的疾病,可发生于任何年龄段。目前腹腔镜下卵巢囊肿剔除术是卵巢良性肿瘤的一线治疗方法,随着微创手术的广泛开展,评价手术对卵巢储备功能的影响也越来越引起医师及患者的关注,相较于其他卵巢功能预测指标(包括窦卵泡数、卵泡刺激素、雌二醇、抑制素等),血清AMH是目前认为最可信和最准确的评价指标<sup>[4-6]</sup>。

本文通过测定单侧卵巢子宫内位囊肿患者及卵巢良性肿瘤患者术前术后 AMH 值来评价腹腔镜卵巢囊肿剥除手术前后卵巢储备功能,为临床手术方式选择及卵巢功能保护提供参考。

## 1 资料与方法

**1.1 一般资料** 选择 2016-01 ~ 2017-06 南华大学附属第二医院收治的行腹腔镜单侧卵巢囊肿剥除手术患者共 210 例,其中术后病理为卵巢子宫内位囊肿患者 90 例为观察组,年龄(34.81 ± 5.82)岁,体重指数(BMI)(23.1 ± 1.95)kg/m<sup>2</sup>,囊肿直径(7.47 ± 2.12)cm;术后病理为卵巢良性肿瘤的患者 120 例为对照组,年龄(36.01 ± 5.99)岁,BMI(22.7 ± 2.64)kg/m<sup>2</sup>,囊肿直径(7.46 ± 2.05)cm。两组年龄、体重指数及囊肿直径比较差异均无统计学意义( $P > 0.05$ ),具有可比性。纳入标准:(1)年龄 20 ~ 45 周岁;(2)月经规律,周期 21 ~ 35 d;(3)病变累及单侧卵巢,直径 4 ~ 15 cm;(4)临床资料未提示卵巢恶性肿瘤。排除标准:(1)既往曾行子宫或附件手术;(2)有多囊卵巢综合征等内分泌疾病或激素分泌异常的疾病;(3)卵巢早衰患者;(4)术前有使用激素治疗或口服避孕药史;(5)合并有心脑血管系统等严重原发性疾病;(6)在随访过程中因患者个人因素失访的病例。

**1.2 AMH 测定** 血清 AMH 测定采用酶联免疫吸附试验(ELISA),严格按试剂盒(广州康润生物)及仪器说明书操作。患者在手术前的最近一次月经第 2 ~ 3 天,手术后第 1 周及第 3 个月、第 6 个月的月经第 2 ~ 3 天采外周静脉血检测 AMH。AMH 下降率(%) = (术前 AMH 水平 - 术后 AMH 水平) / 术前 AMH 水平 × 100%。

**1.3 手术操作** 手术方式均选择气管插管静脉全身麻醉后腹腔镜下卵巢囊肿剥除术,操作均由同一组医师完成,钝性及锐性分离术中粘连并剥除囊肿,剥离过程中如囊肿破裂,则用吸引器吸净囊液,生理盐水冲洗囊内壁,无损伤抓钳将囊肿或囊壁完整至卵巢正常组织剥离,尽量保留所有正常卵巢组织,采用 3-0 可吸收线缝合止血,避免过多使用电凝止血,电凝采用双极电凝,功率均为 40 W,电凝时间均为 2 ~ 4 s/次,电凝尽量远离卵巢门,最后使用 3-0 可吸收线缝合卵巢皮质使卵巢成型。

**1.4 统计学方法** 应用 SPSS17.0 统计软件进行数据分析,计量资料以均数 ± 标准差( $\bar{x} \pm s$ )表示,组间比较采用独立样本  $t$  检验,两组手术前后不同时点 AMH 比较采用重复测量方差分析,两组 AMH 下降

率的比较采用秩和检验, $P < 0.05$  为差异有统计学意义。

## 2 结果

**2.1 两组手术前后 AMH 值的变化比较** 术前观察组血清中 AMH 表达低于对照组( $t = 3.13, P < 0.01$ )。Mauchly 球形检验  $P = 0.001 < 0.05$ ,不满足球形分布假设,本研究采用 Greenhouse-Geiser 调整系数及 Huynh-Feldt 调整系数对检验统计量  $F$  进行自由度调整,手术前后 AMH 值之间的差异有统计学意义, $F = 743.913, P_{G-C} < 0.01, P_{H-F} < 0.01$ 。术后 1 周 AMH 已发生改变,且术后 3 个月、6 个月 AMH 水平仍低于术前。手术前后各时点 AMH 值与分组之间存在交互作用, $F = 10.123, P_{G-C} < 0.01, P_{H-F} < 0.01$ ,说明手术对 AMH 值的影响随分组的不同而不同。见表 1。

表 1 两组手术前后 AMH 值的变化比较( $\bar{x} \pm s$ )

组别	例数	时点	AMH 值(ng/ml)
观察组	90	术前	3.98 ± 1.98
		术后 1 周	1.90 ± 0.90
		术后 1 个月	2.59 ± 1.37
		术后 6 个月	3.26 ± 1.81
对照组	120	术前	4.91 ± 2.24
		术后 1 周	2.41 ± 1.08
		术后 1 个月	3.43 ± 1.60
		术后 6 个月	4.30 ± 2.03

注: $F_{组间} = 13.222, P_{组间} = 0.000, F_{时点} = 743.913, P_{时点}(P_{G-C}, P_{H-F}) = 0.000, F_{时点 \times 组间} = 10.123, P_{时点 \times 组间}(P_{G-C}, P_{H-F}) = 0.001$

**2.2 两组术后 AMH 下降率的变化比较** 术后 1 周、术后 3 个月及术后 6 个月,观察组 AMH 的下降率均高于对照组( $P < 0.05$ )。见表 2。

表 2 两组术后 AMH 下降率的变化比较[( $\bar{x} \pm s$ ), %]

组别	例数	术后 1 周	术后 3 个月	术后 6 个月
观察组	90	51.82 ± 3.13	35.12 ± 4.33	18.71 ± 5.75
对照组	120	50.93 ± 3.10	30.43 ± 3.22	12.66 ± 4.24
Z	-	2.870	7.600	7.340
P	-	0.004	0.000	0.000

## 3 讨论

**3.1 子宫内膜异位症** 是指子宫内膜组织(腺体和间质)出现在子宫体以外的部位,以卵巢最常见,是育龄期女性常见的疾病,其临床表现多样,以慢性盆腔痛和不孕为主,且具有侵袭性和复发性,严重影响广大女性身心健康及生育功能。内异症患者不孕率高达 40.0%,原因复杂,卵巢子宫内位囊肿形成和相关的结构组织改变正常的卵巢皮质可能是卵巢储备功能下降的原因之一<sup>[7]</sup>。有研究显示相对

其他卵巢良性疾病,卵巢子宫内膜异位囊肿患者的血清 AMH 基础水平显著下降,且双侧、体积大的囊肿更易导致患者 AMH 水平降低<sup>[8]</sup>。本次研究同样可以看出卵巢子宫内膜异位囊肿患者较卵巢良性肿瘤患者 AMH 表达水平低,提示卵巢子宫内膜异位囊肿患者较卵巢良性肿瘤患者卵巢储备功能下降。卵巢子宫内膜异位囊肿因侵袭、黏附等病理特征对卵巢皮质造成损害,导致窦前卵泡减少,从而造成子宫内膜异位囊肿患者卵巢储备功能下降并影响其生育功能<sup>[9~11]</sup>。

**3.2 腹腔镜下卵巢子宫内膜异位囊肿剥除术**作为主要的治疗手段,可以全面了解盆腔情况,确定子宫内膜异位症评分及分期,掌握疾病的严重程度,较大程度地改善患者的临床症状。但越来越多研究表明手术可能导致卵巢储备功能的下降<sup>[12]</sup>,甚至导致部分患者卵巢早衰<sup>[13]</sup>。其原因可能为:(1)手术直接导致部分卵巢组织的丢失,卵巢囊肿假包膜上常带有正常卵巢组织,尤其是卵巢子宫内膜异位囊肿,由于其自身的特点如对卵巢组织的浸润、破坏,易与周围组织粘连,与正常卵巢皮质层次不清,手术过程中更容易导致正常卵巢组织的丢失<sup>[14,15]</sup>。Li 等<sup>[16]</sup>发现在被剔除的卵巢子宫内膜异位囊肿标本中可见到邻近囊壁有正常的卵巢组织。(2)手术对卵巢血供的影响导致卵巢功能损害,尤其是处理临近卵巢门的病灶时,不当的牵拉、过度缝合均可导致卵巢血供受损,有研究显示单侧手术后患侧卵巢动脉的收缩期峰值血流速度减低,卵巢基质血流阻力增高<sup>[17]</sup>。(3)电凝止血对卵巢的损害,长时间、反复电凝可导致卵巢组织不可逆的损害。(4)手术后炎症介质介导的损伤等。但随着术后卵巢血管重建,一段时间后卵巢功能有自行修复的能力<sup>[14]</sup>。通过本次研究结果可以看出无论是子宫内膜异位囊肿患者还是卵巢良性肿瘤患者术后 1 周内 AMH 均明显下降,之后缓慢升高,但半年后仍未恢复至原水平。而卵巢子宫内膜异位囊肿患者 AMH 的下降率较卵巢良性肿瘤患者更高,因此术中对卵巢功能的保护及术后卵巢功能的监测尤为重要。

综上所述,卵巢子宫内膜异位囊肿可导致卵巢储备功能下降,腹腔镜下单侧卵巢囊肿剥除术同样可引起卵巢储备功能下降。因此术前谨慎制定手术方案,术中操作仔细尽量减少对卵巢的医源性损伤对卵巢储备功能的保护尤为重要。通过术前、术后对 AMH 的检测可为临床术中保护卵巢组织及术后卵巢功能恢复的评估提供理论依据。

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## 博硕论坛·论著

# 基于问题学习与案例学习相结合教学模式在毛细支气管炎临床诊疗教学中的应用

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**[摘要]** **目的** 探讨基于问题学习(PBL)与基于案例学习(CBL)相结合教学模式在儿科毛细支气管炎临床诊治在儿科见习医师教学中的作用。**方法** 在桂林医学院2013级临床医学系全科医学专业五年制的见习生中随机抽取60名学生, 随机分为观察组和对照组各30例。对照组采取传统教学模式。观察组采取PBL与CBL相结合教学模式。比较两组见习医师在教学前后学习效果的差异。**结果** 对照组理论考核成绩为优秀10人, 良好15人, 差5人。观察组理论考核成绩为优秀22人, 良好8人, 差0人。观察组在毛细支气管炎临床诊断和治疗方面显著优于对照组( $P < 0.05$ )。观察组对毛细支气管炎基础知识掌握程度, 以及在临床诊断、治疗方面、对疾病的高危因素、预防等知识点的掌握程度显著优于对照组( $P < 0.05$ )。**结论** 在临床教学中实施PBL与CBL相结合的模式有助于全科医学专业见习生全面掌握毛细支气管炎临床诊断和治疗。

**[关键词]** 儿科; 基于问题学习教学; 基于案例学习教学; 毛细支气管炎; 临床诊疗

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**The teaching model of combining problem-based learning with case-based learning in the teaching of clinical management of bronchiolitis** ZHENG Wei-hua, PENG Juan, SONG Xiao-dan, et al. Department of Pediatrics, the Affiliated Hospital of Guilin Medical College, Guangxi 541001, China

**[Abstract]** **Objective** To explore the effects of the teaching model of combining problem-based learning (PBL) with case-based learning (CBL) on the teaching of clinical management of bronchiolitis for pediatric interns. **Methods** Sixty intern students were randomly selected from the 2013 grade 5-year General Medicine Major at the School of Clinical Medicine of Guilin Medical University and randomly divided into observation group ( $n = 30$ ) and control group ( $n = 30$ ). The traditional teaching model was adopted in the control group. The observation group was adopted the teaching model combining PBL with CBL. The difference of learning effects were compared between the groups of interns before and after teaching. **Results** The results of theoretical examination before the teaching reform were excellent in 10, good in 15 and poor in 5. After teaching reform, the results of the theoretical assessment were excellent in 22, good in 8 and poor in 0, and the test group was significantly better than the control group in the diagnosis and treatment of bronchiolitis ( $P < 0.05$ ). After the reform, the interns understood better the basic knowledge of bronchiolitis, clinical diagnosis and treatment, as well as the risk factors of the disease, prevention and other knowledge points than they did before the teaching reform ( $P < 0.05$ ). **Conclusion** The teaching model combining PBL with CBL is favorable for general medicine interns to thoroughly grasp the diagnosis and treatment of bronchiolitis.

**[Key words]** Pediatrics; Problem-based learning (PBL); Case-based learning (CBL); Bronchiolitis; Clinical diagnosis and treatment