

# 花粉提取物对前列腺增生细胞作用的研究

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**[摘要]** 将前列腺增生来源的上皮细胞和成纤维细胞在体外进行培养,并观察花粉提取物对细胞的体外作用。结果证明花粉提取物可明显地抑制前列腺增生的上皮细胞或成纤维细胞的增殖,且上皮细胞的反应更为敏感。本结果对进一步研究花粉类物质对前列腺细胞的作用机理提供一定的帮助。

**关键词** 前列腺增生症 花粉

为了探讨花粉类物质对前列腺增生细胞的确切作用及可能的机理,我们观察了离体前列腺增生来源的上皮细胞或成纤维细胞对花粉提取物(cernitin)的反应,结果报告如下。

## 材料与方法

### 一、主要试剂

花粉提取物(cernitin)由瑞典 Helsingborg 公司提供,二甲亚砜(DMSO)和噻唑蓝(MTT)为 Sigma 产品。

### 二、原代培养

前列腺增生组织均来自于经尿道前列腺电切,所有组织均经病理证实。前列腺组织剪碎,胶原酶消化以及成纤维细胞和上皮细胞分离和培养均按 Chaproneine 等<sup>[1]</sup>方法进行,上皮细胞和成纤维细胞分别在 5%CO<sub>2</sub>37℃ 下培养。所有实验用细胞为 2~4 代细胞。分别由培养瓶转移 150μl 成纤维细胞(1.5×10<sup>3</sup>/孔)或上皮细胞(8×10<sup>3</sup>/孔)悬液入不同的 96 孔细胞培养板进行培养。

### 三、细胞增殖实验

细胞培养于 96 孔培养液 48 小时后吸除培养基,分别加入实验培养基(cernitin 浓度 0~4mg/ml)250μl,每一浓度含 8 个样本。分别于

0、24、48、72 和 96 小时用 MTT 法测定细胞增殖率,吸除 96 孔细胞培养板的实验培养基,每孔加入含 0.5mg/ml MTT RPMI 1640 培养基于 37℃ 下孵育 2 小时,吸出培养基后,每孔再加入 150μl DMSO,振荡 30 分钟,测定每孔在 540nm 的吸光度。

## 结 果

花粉提取物对前列腺增生上皮细胞的增殖有明显的抑制作用,其抑制作用于 96 小时达到显著性,1mg/ml 和 4mg/ml 花粉提取物实验组均明显低于对照组(图 1)。花粉提取物对前列腺的成纤维细胞的作用在 1mg/ml 时虽然作用不明显,然而 4mg/ml 的花粉提取物对成纤维细胞的增殖产生明显的抑制作用,  $P < 0.01$  (图 2)。

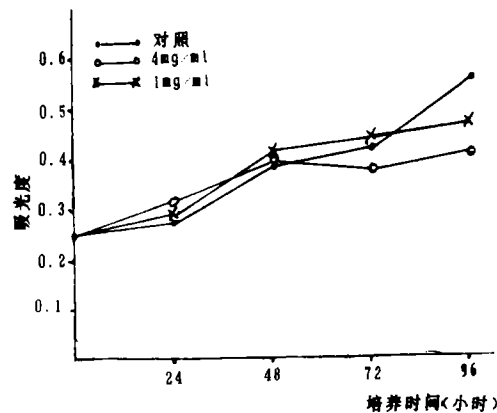


图 1 花粉提取物对前列腺增生上皮细胞的作用

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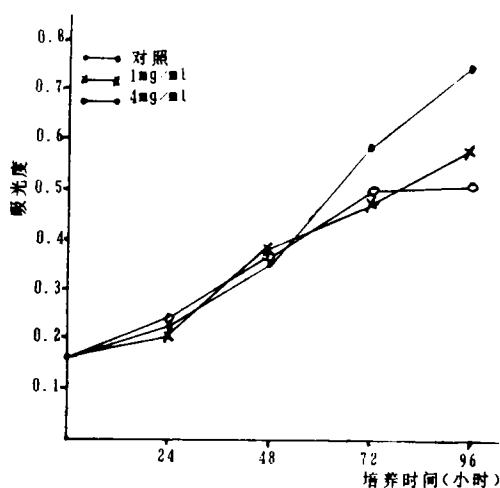


图 2 花粉提取物对前列腺增生上皮细胞的作用

## 讨 论

近年来人们对前列腺细胞的增殖及调控有了较成熟的认识,但在前列腺疾病的处理上仍存在不少问题。前列腺增生症在 60 岁以上男性中十分常见,如处理不当最终将导致排尿困难、尿潴留及肾功能损害,手术治疗前列腺增生症可能发生的并发症及对患者的打击使手术治疗在一些患者的治疗中受到限制。一些非手术的内分泌治疗,远期疗效不能肯定,副作用也较明显。因此,探讨前列腺增生的有效药物治疗在控制前列腺增生的发生发展上有着重要的意义。

花粉类药物已被用于前列腺疾病的治疗,但其疗效各家报道不一。因此,有必要对其作用的实质进行系统的研究。文献表明花粉类物质能有效地治疗前列腺疾病<sup>[2]</sup>,其治疗前列腺疾病的有效成分为 cernilton<sup>[5]</sup>。Cernilton 制备是将花粉进行微生物消化,消化物溶于水后再用有机物萃取。Habib 等<sup>[3]</sup>用花粉提取物(cernitin)对多种来源的细胞进行体外培养的细胞增殖实验,结果显示来源于前列腺的细胞可明显地被花粉提取物抑制,而非前列腺来源

的细胞则不被抑制。进一步的研究发现激素非依赖性前列腺癌细胞系 DU 145 对花粉提取物的抑制反应比激素依赖性前列腺癌细胞系 Lncap 更为敏感。本组实验证明 4mg/ml 的花粉提取物对前列腺增生来源的上皮细胞及成纤维细胞产生明显的抑制作用。Habib 等<sup>[3]</sup>的资料也证实高浓度的花粉提取物可抑制前列腺增生的成纤维细胞和上皮细胞的增殖和 DNA 的合成。

有关花粉类物质对前列腺细胞的作用机理目前仍不清楚。动物实验证明花粉类物质能降低前列腺酸性磷酸酶的活性及升高血和前列腺组织中锌的含量<sup>[4]</sup>。花粉提取物还能松弛尿道括约肌及促使膀胱收缩,使患者症状得到缓解<sup>[5]</sup>。另外花粉类物质可能抑制前列腺素和 Leucotrine 合成所需的循环氧化酶和脂肪氧化酶的活性<sup>[3]</sup>。然而,彻底阐明花粉类物质对前列腺细胞的作用机理仍有许多问题需要探讨。

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**Key words** Bladder neoplasms Carcinoma  
Pathology

(Original article on page 727)

**Expression of bcl-2 oncoprotein in benign prostatic hyperplasia** *Deng Fangming, Gu Fangliu, Xia Tongli, et al.* (Institute of Urology, Beijing Medical University, Beijing 100034)

Bcl-2 oncoprotein is known to protect cells from apoptosis. The aim of this study was to investigate whether bcl-2 correlates with the development of benign prostatic hyperplasia (BPH). Expression of bcl-2 was investigated in 20 cases of BPH and in 12 cases of normal prostate tissue using immunohistochemical technique. All basal cells and some luminal cells of peripheral zone in normal prostate were positive. In central and transitional zone, bcl-2 expression was limited to some dispersed basal cells. In BPH, bcl-2 was strongly expressed in basal cells and most of the luminal cells. The rate of positive cells and its staining intensity were much higher in BPH than in normal prostate. There was no bcl-2 expression in the mesenchyme. The results suggest that high expression of bcl-2 might have a role in the development of BPH.

**Key words** Benign prostatic hyperplasia  
Immunohistochemistry

(Original article on page 729)

**In vitro evaluation of the effect of cernitin, a pollen extract on benign prostatic hyperplasia cells** *Wang Zhiping, Chen Yirong, Liu Guodong, et al.* (Department of Urology, The Second Affiliated Hospital, Lanzhou Medical College, Lanzhou 730030)

Prostate-derived epithelial and fibroblast cells from BPH patients were used to evaluate the in vitro activities of cernitin, a pollen extract. Responses of the primary cultured cells to the agent were assessed by MTT based assay. The results demonstrated that the growth of both the epithelial cells and the fibroblasts was inhibited by the pollen extract, the inhibitory effect being more pronounced on the epithelial cells. This might explain why symptomatic relief might be achieved with the pollen extract in BPH patients.

**Key words** Benign prostatic hyperplasia

Pollen extract

(Original article on page 732)

**Modified Madigan prostatectomy** *Shao Qiang, Lu Wencheng, Zhang Yuhai* (Department of Urology, Beijing Friendship Hospital, Beijing 100050)

From Nov. 1993 to Dec. 1994, modified Madigan prostatectomy was performed for 50 cases of prostatic hyperplasia. The left, right and the median lobes were resected while the prostatic urethra was preserved. The technique was described in detail. The patients have been followed up for 3~13 months with satisfactory outcome. The merits of the procedure were less bleeding, early ambulation and less complication with the preservation of prostatic urethra.

**Key words** Benign prostatic hyperplasia  
Prostatectomy

(Original article on page 734)

**Transrectal ultrasonographic findings as a prognostic parameter for the hyperthermia therapy of prostatic hyperplasia** *Jing Hao, Chao Zhifu, Feng Qiuyun, et al.* (Department of Urology, The First People's Hospital, Changzhou 213003)

Transrectal ultrasonography was carried out before hyperthermia therapy for 120 cases of benign prostatic hyperplasia. The hyperplasia was classified into six degree according to the ultrasonographic findings, with 12 cases of I°, 35 I°, 30 II°A, 35 II°B and 8 N°. Hyperthermia has been effective in I°, I° and in II°A patients with maximum flow rate over 10ml/sec and the residual urine below 100ml. It was not effective of II°B and N° patients. The average conformation rate has been 83.8%. Adjuvant medical management or repeated hyperthermia therapy was required. The transrectal ultrasonographic findings, therefore, provided a reliable guide for the indication of hyperthermia therapy in benign prostatic hyperplasia.

**Key words** Benign prostatic hyperplasia  
Ultrasonography

(Original article on page 736)

**Suprapubic transvesical prostatectomy with preservation of the prostatic urethra (report of 32 cases)** *Xu*