DOI:10.16016/j.1000-5404.1999.10.009



# The effects of nifedipine on ouabain-resistant phenomenon and renin-angiotensin system in elderly cases of essential hypertension*

Tan Jiancong, Zhu Zhiming, Liu Guangyao, Zhu Shanjun, Liu Xiaoli, Hu Houxiang, Wang Haiyan (Researh Center of Hypertension, Department of Cardiology, Daping Hospital, Third Military Medical University, Chongqing, 400042)

**Abstract** Objective: To study the mechanism of ouabain-resistant phenomenon and its relationship with renin-angiotensin system in elderly cases of essential hypertension (EH). Methods: 47 cases of essential hypertension were divided according to their age into aged patients (AP, 24) and nonaged patients (NAP, 23) groups. 25 aged healthy individuals served as normotensive control. Plasma renin activity (PRA), angiotensin Ⅱ (AⅡ), endogenous digoxin-like substance (EDLS) and the binding rate of EDLS with red blood cells (RBC-D%) were determined with radioimmunoassay. The intra-erythrocytic $Na^+$ concentration after 2 h incubation with ouabain was determined, and half of the value of intraerythrocytic $Na^+$ concentration increase was considered as the rate constant of ouabain-sensitive $Na^+$ efflux ($^{\circ}K^{os}$/h). Intraerythrocytic $Na^+$ concentration was measured with flame photometry. After the administration of nifedipine for 4 weeks, the hepertensive cases were examined again. Results: $^{\circ}K^{os}$ and RBC-D% were significantly lower and the plasma level of EDLS significantly higher in AP and NAP groups than in the control. Significantly higher plasma EDLS and $^{\circ}K^{os}$ and lower RBC-D% and PRA were found in AP group than in NAP group. The $Na^+$ pump in the AP group showed an ouabain-resistant phenomenon. All the findings were negatively correlated to the age and systolic pressure of the patients and the changes of RBC-D% and PRA were negatively correlated to those of EDLS. In the NAP group, the changes of blood pressure were negatively correlated to those of EDLS. After 4 weeks of nifedipine treatment, $Na^+$ pump activity, PRA and other parameters were increased in the AP group but only $Na^+$ pump activity was increased in the NAP group. Conclusions: Our findings indicated that the affinity of EDLS with cellular membrane is decreased in aged patients with EH, which is known as the ouabain-resistant phenomenon. Ouabain resistance inhibits the secretion of renin and angiotensin through its effects on sodium metabolism and nifedipine can partially correct this abnormality.

**Key words** hypertension; ouabain; renin-angiotensin system; nifedipine.

* This project was supported by the National Natural Science Foundation of China, No. 39725013

文章编号:1000-5404(1999)10-0719-02

# 喉癌患者血清 sIL-2R 含量的观察及其意义

# Observation and significance of serum sIL-2R in patients with laryngeal cancer

刘碾记* 黄晋生** (第三军医大学附属西南医院耳鼻咽喉科) 重庆,400038

近年来研究发现,头颈部肿瘤患者血清中可溶性白细胞介素2受体(Soluble interleukin 2 receptor,sIL-2R)可升高,血清sIL-2R含量在一定程度上反应体内T细胞的活化及肿瘤活动情况[1]。我们用酶联免疫吸附法检测了喉癌患者及健康献血员sIL-2R含量,现将结果报道如下。

## 1 材料与方法

### 1.1 研究对象

健康献血员20例,男女各10例,为我院输血科提供。喉癌10例,为我院住院病人,经手术、病理证实。

### 1.2 血清 sIL-2R 测定

sIL-2R 酶联检测试剂盒为德国 Bochringer Mannbeim Biochemica 公司产品。

小心吸取20 μl标准或血清样本至滴定板上,然后再加200 μl稀释好的sIL-2R抗体和sIL-2R抗体-PDD混合液,轻轻振摇使之混匀,加盖室温孵育4 h。吸净各孔液体,用洗涤缓冲液冲洗3遍,用洁净吸水纸将孔内液体吸净。加200 μl底物[ABTS,2,2′-连氮-双(3-乙基苯并噻唑啉-6-磺酸盐)]液轻轻震摇使之混匀,室温孵育10~15 min。

Beckman 700型生化分析仪405 nm检测A值。标准品直

(下转722页)

* 刘碾记,男,47岁,副主任医师,副教授
** 海军总医院中心实验室 北京,100037

?1994-2016 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net

apoptotic cell death in uterine cervical carcinoma cells induced by 5-fluorouracil. Int J Cancer, 1997, 71(4): 668
3 Shih S C, Stutman O. Cell cycle-dependent tumor necrosis factor apoptosis. Cancer Res, 1996, 56(7): 1591
4 Hale A J, Smith C A, Sutherland L C, *et al*. Apoptosis: Molecular regulation of cell death. Eur J Biochem, 1996, 236(1): 1
5 Golstein P. Controlling cell death. Science, 1997, 275(5303): 1081
6 Reed J C. Bcl-2 and the regulation of programmed cell death. J Cell Biol, 1994, 131(1): 256

(收稿: 1999-01-15; 修回: 1999-08-06)
(编辑 冷怀明)

# 5-fluorouracil-induced apoptosis of human gastric carcinoma cell line SGC-7901

Liu Haifeng, Liu Weiwen, Fang Dianchun (Department of Gastroeneterology, Southwest Hospital, Third Military Medical University, Chongqing, 400038)

**Abstract** **Objective**: To observe the pattern of 5-fluorouracil-induced apoptosis of the cells of gastric cardinoma cell line and evaluate the role of the drug in the chemotherapy of the malignancy. **Methods**: The effects of 5-fluorouracil on the growth cycle and apoptosis of the cells of SGC-7901 cell line were observed with cell morphology, electrophoresis on agarose gel and flow cytometry and the expression of bcl-2 and bax protein in the carcinomatous cells also examined. **Results**: 5-fluorouracil induced significant apoptosis of SGC-7901 cells and internucleosomal DNA fragmentation displayed the chracteristic ladder-lide arrangement of the electrophoretic bands. The expression of bcl-2 was downregulated. **Conclusion**: It is possible that 5-fluorouracil exercises its chemotherapeutic effects on gastric carcinoma through its induction of cell apoptosis.

**Key words** gastric carcinoma; apoptosis; 5-fluorouracil

(上接 719 页)

线回归相关系数 $r=0.996$，用直线回归方程将所测样品 A 值代入计算得样品 sIL-2R 含量。

## 2 结果

健康献血员血清 sIL-2R 含量：10 例男性献血员血清 sIL-2R 含量为(126.2±76.4)pmol/L；10 例女性献血员为(142.3±73.7)pmol/L，两者相差不显著($P>0.05$)。全部 20 例健康献血员血清 sIL-2R 含量为(134.2±76.5)pmol/L。喉癌患者血清 sIL-2R 含量为(251.3±164.1)pmol/L，与献血员比较，$P<0.05$，差别显著。

## 3 讨论

文献[2]报道，肺、胃、宫颈、乳腺等实体肿瘤患者血清 sIL-2R 水平显著高于正常人，在发生转移的患者增高更为明显。我们的实验结果表明：喉癌患者血清中 sIL-2R 明显高于正常人。其升高的机制大多数学者认为可能与活化 mIL-2R $P_{55}$蛋白阳性细胞数目增加引起 sIL-2R 释放增多有关。另一方面，喉癌患者细胞免疫功能低下，而其 sIL-2R 水平却显著增高，这很可能是因为 sIL-2R 与 IL-2 结合使 IL-2 廓清加速，活化的 T 淋巴细胞静息下来，其次大量的 sIL-2R 从细胞膜上脱落，使活化的淋巴细胞功能处于衰竭状态所致[3]。李光宇等[4]对不同病理分化程度、临床分型及分期的喉癌患者血清 sIL-2R 水平比较，发现均具有明显的相关趋势。

我们认为，血清 sIL-2R 作为一种肿瘤的相关物质，检测其水平变化，可作为临床上喉癌患者的血清学监测指标之一。

**关键词** 喉癌；sIL-2R
**中图法分类号** R739.65 **文献标识码**：B

## 参考文献

1 Lai K N, Frep M D, Mphil S H, *et al*. Soluble interleukin-2 receptors in patients with nosopharyngeal carcinoma. Cancer, 1991, 67(8): 2180
2 Lissori P, Barni S, Rovelli F, *et al*. The biological significance of soluble interleukin-2 receptors in solid tumors. Eur J Cancer, 1990, 26(1): 33
3 马玲国，刘学仁. 可溶性白细胞介素 2 受体与头颈肿瘤. 国外医学. 耳鼻喉科学分册，1994，18(1)：14
4 李光宇，郑 敏. 喉癌病人血清可溶性白细胞介素Ⅱ受体的实验性研究及临床意义. 临床耳鼻咽喉科杂志，1994，8(2)：72

(收稿：1998-09-19；修回：1999-05-19)
(编辑 张大春)

?1994-2016 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net