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8 Macleod K M. The effect of insulin treatment on change in vascular reactivity in chronic. experimental diabetes. Diabetes, 1985; 34(11): 1160

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Changes of contractile reactivity of aorta from alloxan- induced diabetic rats

Zhang Xueliang, He Jun, Shu Changda (Department of Endocrinology, Xinqiao Hospital, Third Military Medical University, Chongqing, 630037)

Abstract Objective: To study the changes of contractile function of aorta in the early stage of diabetes mellitus. Methods: Intact endothelium and de-endothelium rings of aorta from diabetic rats induced with alloxan for 4 weeks (n = 11) and the control rats (n = 11) were put into Krebs solution bubbled with carbogen (95% O_2+ 5% CO_2). Each ring was suspended with two metal hooks in the solution with the top hook being connected to a tension transducer and the bottom one being fixed to the trough. The tension transducer was then connected to a physiological recorder. After the rings were equilibrated at 2g resting tension for 40 min, norepinephrine(NE), phenylephrine(PE), KCl and $CaCl_2$ were added respectively to Krebs solution to reach different concentrations. Tension of aortic rings responding to the agents was recorded with the physiological recorder. Results: Contractile tensions responding to 10^{-7}, 10^{-6} and 10^{-5} M NE and PE were significantly higher in aortic intact endothelium and de-endothelium rings from diabetic rats than in those from the control ($P < 0.05$) while no significant difference was found among the contrctile tensions of any rings in both groups responding to KCl and $CaCl_2$ with the same concentrations. Conclusion: The contractile response of the aorta to adrenergic anonists is increased in the early stage of diabetes mellitus.

Key words contractile response; aorta; diabetes mellitus; rat.

谷氨酰胺在创伤后免疫细胞中的代谢及其免疫调理的研究

Study on glutamine metabolism in immunocytes and its immunomodulation after trauma

杨俊涛 王正国 朱佩芳 (第三军医大学附属大坪医院野战外科研究所第四研究室) 重庆, 630042

严重创伤可导致机体免疫功能低下,但其发生机理尚不清楚。为了阐明严重创伤后免疫受抑的可能机理,本实验采用闭合性创伤大鼠模型,通过肠内补充或不补充谷氨酰胺(Gln)两种方式进行对比实验,从细胞代谢角度较系统地研究了创伤后不同来源的免疫细胞内 Gln代谢和免疫功能的动态变化,以及 Gln对创伤合并绿脓杆菌感染大鼠转归的影响,并探讨了补充 Gln改善伤后免疫功能受抑的机理;此外,本实验还就肠内补充 Gln对手术创伤病人外周血单个核细胞(PBMC)内 Gln代谢及免疫功能的影响进行了观察,主要结果和结论如下:

(1)闭合性创伤后大鼠脾脏、淋巴结细胞及腹腔巨噬细胞内 Gln代谢非常活跃,表现为细胞对 Gln的利用率明显增加,细胞内谷氨酰胺酶(GA)活性明显升高。提示 Gln在创伤后的免疫细胞中扮演着重要的角色。

(2)原位杂交及斑点杂交结果显示:闭合性创伤后大鼠脾脏和淋巴结组织的 GA mRNA阳性颗粒主要分布在脾脏白髓中央动脉周围淋巴鞘和脾小体、肠系膜淋巴结皮质等细胞中;伤后第 1天,脾脏和淋巴结 GA mRNA含量即显著增加,巨噬细胞胞浆内 GA mRNA颗粒明显增多,表明创伤后脾脏、淋巴结和巨噬细胞 GA mRNA的转录及生成明显增强;提示 GA活性升高的原因之一,可能是创伤促进了免疫细胞 GA基因表达,增加了 GA蛋白合成所致。

(3)创伤后大鼠脾脏、淋巴结细胞及腹腔巨噬细胞 Gln代谢的活跃程度受到血浆和细胞内 Gln水平变化的影响。伤后若不补充 Gln,将导致大鼠体内 Gln的严重缺乏,表现为血浆 Gln浓度进行性下降,脾脏、淋巴结细胞及腹腔巨噬细胞内 Gln含量明显减少;随着体内 Gln的缺乏,上述细胞的 GA活性受抑,

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4 谭 骏,郭华阳. DNA重组技术及其在基因诊断中的应用. 见蔡文琴,王伯 主编,实用免疫细胞化学与核酸分子杂交技术. 成都:四川科学技术出版社,1994 497~510
5 郭华阳,周来新,刘斌等. 复发尖锐湿疣中 HPV基因的原位杂交法分型观察. 第三军医大学学报,1996;18(1):30
6 Kanitakis J, Escarich, Trepo C *et al*. Detection of HIV DNA and RNA in the skin of HIV-infected patients using the PCR. J Invest Dermatol, 1991; 97(1): 91.

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Detection of HPV DNA in the dermis and epidermis of lesions by PCR in patients with recurring condyloma acuminata

Guo Huayang, Wang Jianghua, Zhou Laixin, Chen An, Liu Shenghua, Liu Bin, Ye Zhigia, Jin Xiaolin (Department of Clinical Biochemistry, Faculty of Medical Laboratory Sciences, Third Military Medical University, Chongqing, 630038)

Abstract Objectives: To detect HPV DNA in the dermis and epidermis of lesions by PCR in patients with recurring condyloma acuminata and to explore the reasons of recurrence. Methods: Sixteen lesions were excised from 16 patients with recurring condyloma acuminata (RCA). Dermis was separated from epidermis by treatment with sodium bormide. Both DNA extracted from dermis or epidermis and sodium bormide solution were amplifyed respectively for the presence of HPV DNA using the general primer-mediated polymerase chain reaction(PCR). Of which the positive products were further HPV-typed by dot blot hybridization using digoxigenin-labelled specific subtype oligonucleotide probes. Results: HPV DNA was found in the dermis of four specimens, type 6 or 11 in one and type 16 in two, while in the epidermis of 16 specimens, HPV 6 in 10, HPV 11 in 4, HPV 16 in 5, and HPV 18 or other types in one, two or three types in six, HPV DNA was not detected in the dermis and epidermis from normal foreskin. Two of the 4 positive patients with RCA in the dermis recurred repeatedly in half a year. Conclusions: So there is HPV DNA in the dermis of some lesions and this may explain the repeat recurrence of the diseases in sporadic cases.

Key words condyloma acuminata; recurrence; polymearse chain reaction

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Gln利用率以及 GA mRNA水平的增幅有不同程度的降低;补充 Gln,能有效地提高血浆 Gln水平,保持脾脏、淋巴结细胞及腹腔巨噬细胞内 Gln正常含量,增加细胞内 Gln利用率、GA活性及其基因表达,进而维持伤后免疫细胞内 Gln较高代谢状态。

(4)闭合性创伤后大鼠脾脏及胸腺重量减轻,脾脏和肠系膜淋巴结细胞的 T、B淋巴细胞增殖反应下降,IL-2生成减少,细胞膜 IL-2R表达受抑;同时,腹腔巨噬细胞对绵羊红细胞的吞噬活性降低,IL-1的产量下降;提示闭合性创伤大鼠免疫功能受到明显抑制,但补充 Gln组动物的免疫抑制程度明显轻于非补充组。我们认为,体内 Gln缺乏可进一步加重创伤后免疫抑制,延缓免疫受抑的恢复;补充 Gln能明显减少上述免疫功能指标的受抑程度,缩短免疫受抑的持续时间;提示伤后给予外源性 Gln能明显改善免疫细胞功能。

(5)创伤后大鼠脾脏、淋巴结及腹腔巨噬细胞丙二醛(MDA)含量增加,还原型谷胱甘肽(GSH)水平下降,表明创伤后体内氧自由基产生增多,抗氧化能力减弱;补充 Gln有助于保持血浆和免疫组织细胞内 GSH水平,增强机体抗氧化能力,降低伤后体内过氧化脂质水平,减少伤后免疫组织细胞的氧化性损伤,这可能是 Gln改善创伤后免疫功能受抑的机理之一。

(6)补充 Gln可减少创伤感染后脾脏和肾脏绿脓杆菌的检出率,提高创伤感染大鼠的存活率,原因可能与其改善了免疫抑制状态有关,包括提高创伤感染后免疫组织的抗氧化能力,减少 TNF的生成,降低机体感染及炎性反应程度等。

(7)手术创伤病人 PBMC对 Gln的利用率加快,GA活性升高;而血浆 Gln浓度术后第 1天即明显下降,若不补充 Gln,术后第 6天仍将持续低水平,同时,细胞内 Gln含量也明显降低,导致 GA活性及 Gln利用率下降;肠内补充 Gln,能有效地增加术后血浆 Gln的浓度,维持 PBMC内 Gln的正常含量,提高 PBMC内 Gln的代谢水平。

(8)补充 Gln对手术病人 PBMC经 PHA刺激的增殖反应、IL-2的生成和细胞膜 IL-2R的表达,均有一定的促进作用;术后血浆 GSH浓度明显下降,MDA含量明显增加,表明手术创伤后机体消耗 GSH增加或和产生 GSH减少,补充 Gln能维持术后血浆 GSH正常含量,增强术后组织抗氧化损伤能力,这可能也是 Gln改善术后 PBMC功能的原因之一。

关键词 创伤;创伤感染;淋巴细胞;巨噬细胞;谷氨酰胺代谢;谷氨酰胺酶;基因表达;免疫功能;谷胱甘肽;脂质过氧化;
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