

大承气汤冲剂对人血浆胃动素的影响

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摘要 本研究以放射免疫分析法测定了健康人服用大承气汤冲剂后血浆胃动素浓度并观察了其动态变化。结果发现:服药后平均血浆胃动素浓度较服药前明显升高($P<0.01$)。自服药后 55 分钟,血浆胃动素浓度即显升高,这种上升态势至少维持至服药后 145 分钟。结果提示:大承气汤冲剂增强肠运动的作用与其兴奋肠道运动的体液调节途径使血浆胃动素浓度升高有关。从肠道运动功能的内分泌调控角度为阐明该方的作用机理提供了新依据。

主题词 大承气汤/治疗作用 促胃动素

大承气汤为中医寒下法的代表方剂,根据“六腑以通为用”的原则,此方在急腹症的中西医结合治疗中有着广泛的应用范围。大承气汤的动物药理实验研究结果证明:该方能增强肠道蠕动及推进功能;这种对肠管的兴奋作用可能是对肠管平滑肌的直接作用或通过神经介质而起作用^[1]。但最新的胃肠道运动生理学研究资料显示:胃肠道的运动和电变化是一个复杂的生理过程,胃肠道激素参与这一过程的调控,其中胃动素所发挥的影响尤为重要^[2]。大承气汤对胃肠道运动的兴奋作用机理是否与胃动素相关?迄今为止尚未见文献报告。为此,本研究观察了健康人口服大承气汤冲剂后血浆胃动素浓度的变化,旨在深入探索其作用机理。

1 材料与方法

1.1 一般资料:14 例志愿者均系既往无消化、代谢和内分泌系统疾病,无心、肝、肾、脑、肺等重要脏器疾病史,4 周内未服任何药物的医学生 and 医务工作者。男性 8 例,女性 6 例,年龄 22~48 周岁,平均年龄 31 周岁。

1.2 药物及服用方法:大承气汤冲剂组成:大黄 12g,芒硝 9g,厚朴 15g,枳实 15g。该方由天

津市中西医结合急腹症研究所药物研究室按各味中药的重量比例统一制成冲剂,每袋冲剂重 3.5g,每 4 袋相当 1 剂中药的药量,使用时取大承气汤冲剂 4 袋,冲入 200ml 开水中浸泡 20 分钟,待充分溶出药物成分后,弃去药袋服用药液,其容量约 100ml 左右,经口服用。

14 例健康志愿者随机分为两组。第一组 7 例为服用大承气汤冲剂组(简称给药组),第二组 7 例饮用同等容量温开水作为对照(简称对照组)。

1.3 实验程序:受试者均自实验前一日晚餐后停止进食水直至实验结束。血样采集于次日上午空腹进行。实验时于受试者上肢浅静脉安置无菌干燥套管针,每间隔 15 分钟采取血样 2ml,连续取血 8 次后,给药组服用大承气汤冲剂药液(4 袋/150ml),对照组饮用温开水 150ml,于服药(或饮水)后 40 分钟,继续每隔 15 分钟取血样 2ml,连续取血 8 次。

1.4 放射免疫测定方法:胃动素放免测定方法系由本实验室自行建立^[3]。各样品管均做双管测定,按加样程序加样后,4℃温育 24 小时加入分离剂,充分混匀,离心 30 分钟,吸去上清液,用自动晶体闪烁计数器(PAKAR Dr5002B)测定沉淀部分放射性。标准曲线用四参数 Logist 法拟合,用微机计算测定结果。

2 结果

2.1 服药前后血浆胃动素浓度变化:对照组饮水前平均血浆胃动素浓度为 $100.18 \pm 28.1 \text{ pg/ml}$ (均值±标准差,下同),饮水后平均血浆胃动素浓度为 $99.4 \pm 27.4 \text{ pg/ml}$ 。两组均值相近($P>0.05$)。

给药组服药前平均血浆胃动素浓度为 $94.3 \pm 25.6 \text{ pg/ml}$,服大承气汤冲剂后平均血浆胃动素浓度为 $116.15 \pm 22.5 \text{ pg/ml}$ 。服药后血浆胃动素浓度明显升高($P<0.01$)。

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2.2 服药后血浆胃动素浓度动态观测:以给药组及对照组服药(或饮水)前平均血浆胃动素浓度为 100%,分别计算两组在服药(或饮水)后不同时间血浆胃动素浓度的百分变化。

对照组饮水后胃动素浓度似略呈下降趋势,但变化不著,围绕饮水前基础水平呈微小不规则波动,变化幅度最大的仅为饮水前的 0.78%。

给药组自服药后 55 分钟血浆胃动素浓度即明显升高,至 70 分钟之前呈陡然上升之势,70 分钟后上升幅度趋于平缓,这种上升的趋势至少维持至服药后 145 分钟,其升高幅度最高达服药前的 38.2%。

附表 两组服药(或饮水)后不同时间
血浆胃动素变化(%)

分组	例数	40'	55'	70'	85'	100'	115'	130'	145'
给药组	7	1.8	12.6	23.2	25.2	28.4	32.2	36.4	38.2
对照组	7	0.12	-0.31	0.78	0.52	-0.22	0.44	0.38	0.18

3 讨论

众所周知,人循环血中的胃动素浓度在空腹期具有波动性。为了最大限度地排除胃动素生理性波动对实验结果的干扰,在实验设计上我们采取了在给药前后多次取血样,计算给药前后平均血浆胃动素浓度,再将给药前后胃动素浓度的平均值进行对比分析的方法,从而增加了实验结果的可靠性和可信性。

大承气汤对肠道运动的兴奋作用已在动物实验中得到证实。肠道运动是肠平滑肌细胞收缩活动的综合表现,小肠的运动形式分为消化期运动和消化间期运动二种方式。在消化间期小肠运动的主要形式是周期性移行性运动波,又称为移行性运动综合波(M. M. C.)^[2]。

在胃动素与 MMC 相关性的研究中,Itoh 等首先在狗上观察到:当胃和小肠上端出现 MMC III 期时,立即静脉滴注胃动素,通常在 20 分钟内发生第二个 MMC 周期,其特征与自发的 MMC 相似^[4]。Vantrappen 等在人体也观察到了外源性给予胃动素诱发 MMC 的现

象^[5]。机体血液中的胃动素浓度在消化间期处于周而复始地消涨变化之中,内源性胃动素浓度周期性变化与 MMC 的周期性有着十分紧密的相关性,Itoh 和 Peeters 分别在对狗和人的实验中揭示了二者之间的必然联系,说明胃动素在 MMC 的调节中所发挥的重要作用^[6,7]。

本研究的实验结果从肠道运动内分泌激素调控的角度,为解释大承气汤冲剂的作用机理提供了新依据。大承气汤冲剂升高血浆胃动素浓度的作用提示:大承气汤兴奋肠道运动的机理除了已知的直接兴奋肠平滑肌及通过神经介质之外,还可通过肠道运动的体液调节途径,增加了血浆胃动素浓度,加强了 MMC 的启动及缩短周期进而实现增强肠道运动的作用机理。

胃动素的免疫组化研究表明:人类胃肠道中的胃动素细胞含量最高的是近端小肠,尤以十二指肠和近端空肠含量最高,而远端小肠的含量依次递减^[8]。口服大承气汤冲剂 55 分钟后,血浆胃动素浓度逐渐升高并维持至服药后 145 分钟的实验结果提示:大承气汤冲剂升高血浆胃动素浓度的作用可能与刺激消化道腔内胃动素细胞内源性释放胃动素有关。

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ABSTRACTS OF ORIGINAL ARTICLES

Comparative Observation on Heart Failure of Left Ventricular Diastolic Insufficiency Treated by Differential Diagnosis of Zheng (Syndromes) : Report of 45 Cases.

Zhou Shen, Yang Weihua, Pu Xianchun, Li Yousheng, Hu Xuejun, Wu Dahua

The total effective rate of our treatment for 43 cases was 86.0%. When compared with a group of 25 cases treated by conventional western drug, the effective rate revealed significant difference ($p < 0.05$). Furthermore, the improvement of left ventricular diastolic function was also superior in the treatment group ($p < 0.01$). Traditional treatment also improved the function of left ventricular systole.

Authors'address: Hunan Academy of TCM, Changsha, 410006

Key Words: Heart failure, congestive/TCM therapy ventricular function, left/drug action treatment based on differential diagnosis of Zheng

(Original article on page 667)

Effect of Decoction of Removing Blood Stasis and Resolving Phlegm on Intracranial Hematoma and Hemorrhage in Cerebral Hemorrhage.

Yang Wanzhang, Guo Zhouke, Wu Haiqin, Shi Shengguang, Zhang Farong Xiang Li, Li Mingfu.

The TCM treatment group was observed with a control group treated by western conventional therapy, the total number of cases being 51 cases. For the treatment group, the elimination of hematoma and lowering of blood viscosity were also superior to the control group ($p < 0.05$), demonstrating that early treatment with herbal drugs were beneficial to the elimination and absorption of the hematoma, improvement of concentration and agglutination of blood, and early recovery of brain function and limbs.

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Key Words: cerebral hemorrhage/TCM therapy hematoma/TCM therapy @ Decoction of Removing Blood Stasis and Resolving Phlegm hemorrhage

(Original article on page 670)

Effect of Dachengqi (Drastic Purgative) Decoction Medicinal Granules in Plasmal Gastrokinetin.

Zhou Weiping, Wu Xianzhong, Lu Huanzhang

The observation was performed by radial immunoanalysis for the determination of concentration of gastrokinetin in plasma and its dynamic changes. Results showed that, after therapy, the concentration increased markedly ($p < 0.01$). The gastrokinetin began to increase 55 minutes after drug administration and continued to increase for at least 145 minutes after administering the drug, indicating that the Granule can strengthen the intestinal movement which was related to the increase of plasmal gastrokinetin through excitation of humoral adjustment. This also contributed a new basis to the mechanism of action of the Granules based on the humoral control on the intestinal motor function.

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Key words: Dachengqi (Drastic Purgative) Decoction/therapeutic action gastrokinetotropic hormone

(Original article on page 676)

Clinical Observation and Bacteriostatic Study on Axiang Powder, a Traditional Drug of Miao Nationality.

Wu Zulin, Wang Lizhuang, Cai Qianying, Zhou An, Su Jiaohua

Axiang Powder is a powdered drug applied by Miao people for the treatment and prevention of URI (upper respiratory infection), hemorrhoid, carbuncles and boils. Preliminary analysis revealed it to contain some ten kinds of herbs. By clinical analysis, it was shown that the Powder yields rather good therapeutic results on cold, tonsillitis, pyogenic tonsillitis, contusion, sprain. Bacteria strain isolated clinically can be inhibited by Axiang water decoction.

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Key words: Pharmaceuticals of minority Miao Nationality @ Axiang Powder

(Original article on page 680)