mutation of P16 gene exon 2 was examined with single strand conformational polymorphism (SSCP) and the status of P16 gene methylation was screened with PCR based methylation analysis. In addition, 35 specimens of paraffin embedded PHCC tissue including the surrounding noncarcinomatous liver tissues were examined for P16 protein expression with immunohistochemical analysis. **Results:** 2 homozygous deletions and 1 hemizygous deletion were found in the 25 PHCC specimens. In the remaining 22 specimens, no point mutation was found. Hypermethylation occurred in 24% (6/25) of the cases and the surrounding noncarcinomatous were always unmethylated at the P16 locus. Loss of P16 protein expression occurred in 45.7% (16/25) of the cases and all the noncarcinomatous liver tissues were P16 staining positive. In the 25 cases of PHCC examined for P16 gene, 3 cases showed P16 gene deletion and 6 cases were found to have methylation of P16 gene. And all the 25 cases were absent for P16 protein expression. **Conclusion:** Inactivation of P16 gene may play and important role in the genesis of primary PHCC.

Key words hepatocellular carcinoma; P16 gene; polymerase chain reaction; immunohistochemistry

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烫伤对大鼠肠粘膜内花生四烯酸代谢物的影响

The influence of burn on the metabolism of arachidonic acid in small intestine in rats

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烫伤引起的应激反应会导致胃肠道粘膜严重损伤,其机制尚不完全清楚。有人认为[1]花生四烯酸代谢产物 PGs TXA$_2$ 等,在粘膜损伤和修复过程中起重要作用。但目前对烫伤后肠粘膜内花生四烯酸代谢变化研究较少。本实验通过测定大鼠烫伤后空肠和回肠内三种花生四烯酸代谢产物含量的变化,进一步揭示烫伤导致肠粘膜损伤的发病机制,并为促进肠粘膜修复提供线索。

1 材料与方法

1.1 仪器

FT-608 ^{125}I放免测定仪(中国),BACKMAN紫外分光光度计(德国)。

1.2 动物

Wistar大鼠 42只,体重 180~220 g,由本校动物实验中心提供。动物背部除毛,饲养 24 h后以(94±1)℃热水烫伤 18~20 s,烫伤面积占总体表面积的 30%,病理学检验证实为Ⅲ度烫伤。

1.3 取材

动物随机分为 6组,烫伤后分别于 0 6 12 24 48 72 h断头处死,处死动物前禁食 12 h 取空肠和回肠轻轻洗净粪便,刮取肠粘膜,迅速置液氮中冷冻保存。测定时取约 150 mg肠粘膜,以生理盐水 3 ml匀浆,3 000 r/min离心 15 min,取上清液备测。

1.4 放免法测定上清液中 PGE$_2$ TXB$_2$ 和 6-ketal-PGF$_{1\alpha}$的含量

PGE$_2$ TXB$_2$ 和 6-ketal-PGF$_{1\alpha}$放免分析试剂盒均购自苏州医学院血栓室。取待测液 100μl与相同体积的^{125}I示踪剂混匀后加入相应抗体与之反应,再以聚乙二醇 4 000吸附抗原抗体复合物,通过测定其放射性即可推算出样品中三种花生四烯酸代谢产物的含量。

1.5 考马氏亮蓝法测定待测液中蛋白质的含量[2]

1.6 数据统计

结果以每 mg蛋白中所含 3种代谢产物 pg数表示($\bar{x}\pm s$),组间进行显著性 t检验。

2 结果见表 1

在空肠和回肠中 PGE$_2$含量烫伤后 6 h即开始下降,12 h后略有恢复,24 h后又逐渐降低。TXB$_2$的含量在烫伤后 12 h下降最明显,24 h后开始增加,72 h时又显著下降。在空肠中 6-keto-PGF$_{1\alpha}$的含量呈持续性下降趋势,且各时项点与对照组相比均具有非常显著性差异;在回肠中则以烫伤后 6 h和 72 h时下降最明显。而 TXB$_2$/6-keto-PGF$_{1\alpha}$的比值则呈先下降后上升的趋势,最低点为烫伤后 12 h,最高点为烫伤后 48 h

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Clinical evaluation of the incisions for submucous resection of nasal septum

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Abstract **Objective**: To compare clinically the advantages and disadvantages of 5 kinds of incisions for submucous resection of the nasal septum. **Methods**: 217 cases of submucous resection for nasal septum deviation were divided into 5 groups according to the technique of incision used. The type of septal deformity, the severity of bleeding in operation, postoperative pains and swelling and the time taken for healing of all the cases were analyzed. **Results**: Oblique L-shaped incision resulted in mild tissue damage, slight reaction and quick healing. **Conclusion**: Oblique L-shaped incision is the technique of choice for submucous resection to correct nasal septal deviation.

Key words deviation; nasal septum; submucous resection

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表 1 烫伤大鼠小肠粘膜内 PGE_2、TXB_2、6-keto-$PGF_{1\alpha}$ 及 TXB_2/6-keto-$PGF_{1\alpha}$的变化

Time (h)	PGE_2 (pg/mg)	TXB_2 (pg/mg)	6-keto-$PGF_{1\alpha}$ (pg/mg)	TXB_2/$PGF_{1\alpha}$
		空肠		
0	187.5± 53.42	495.1± 148.9	261.7± 62.00	1.902± 0.561
6	105.8± 20.30☆	267.9± 111.9☆	145.9± 38.41☆	1.819± 0.459
12	150.0± 54.92	11.2± 72.51☆	122.7± 34.24☆	0.889± 0.648☆☆
24	125.1± 41.73☆	264.2± 58.86☆	120.0± 33.67☆	2.324± 0.782
48	109.8± 16.23☆	325.9± 75.64☆	106.3± 64.44☆	3.798± 0.853☆☆
72	83.56± 36.33☆☆	257.9± 86.40☆	103.6± 30.24☆☆	2.584± 0.509☆
		回肠		
0	158.4± 46.02	340.8± 172.5	202.6± 56.31	1.797± 0.865
6	98.67± 25.57☆	165.6± 77.26☆☆	97.12± 28.35☆☆	1.755± 0.874
12	117.7± 32.00	157.9± 39.50☆	120.0± 18.40☆	1.475± 0.458
24	103.0± 10.53☆	261.3± 62.18	120.4± 48.33☆	2.363± 0.428
48	122.0± 30.08	377.2± 179.1	121.1± 46.15☆	3.402± 1.058☆☆
72	68.50± 29.13☆☆	201.2± 42.47☆	87.20± 22.00☆☆	2.51± 0.648☆

☆: $P < 0.05$, ☆☆: $P < 0.01$ *vs* control

3 讨论

花生四烯酸的代谢产物在机体的病理和生理过程中具有重要作用,早在 70年代就有人提出 PGE_2减少是导致消化性溃疡发生的首要因素。应激性溃疡是烧伤病人的合并症,吴予平等[3]证明烫伤大鼠胃粘膜损伤与 PGE_2减少有关,给予消炎痛抑制前列腺素的产生可加重粘膜损伤程度。本实验结果显示大鼠烫伤后小肠粘膜内花生四烯酸代谢产物有与之类似的变化规律。应激反应发生时基础代谢率增加,前列腺素和血栓烷素分解代谢加快,故而烫伤 6 h内其含量下降,随后 PGE_2等代偿性增加,这是机体的防御性反应。应激时间延长,机体转入失代偿期,PGE_2等含量随之降低。以往的研究表明[4]大鼠烧伤 24 h后胃肠粘膜即出现较严重的损伤。TXB_2是 TXA_2代谢终产物,两者均为缩血管物质,烫伤后变化规律与 PGE_2相似,机制尚不清楚。但一般认为 TXA_2与 PGI_2的比率是影响血管收缩与舒张的主要因素[5],本实验结果显示 TXB_2与 PGI_2代谢终产物 6-keto-$PGF_{1\alpha}$的比率先降低后升高,这与烫伤后胃肠粘膜先充血水肿后缺血损伤的病理变化相吻合。张澍田等[6]将富含花生四烯酸的豆油乳用于三种模型的胃溃疡病人,结果使胃粘膜内 PGE_2含量增加,并明显改善了粘膜损伤状况。有人用 PGI_2的类似物(Beraprost)治疗大鼠烧伤后肠粘膜损伤也取得了较好的效果[7]。目前尚无烫伤后肠粘膜内花生四烯酸代谢变化的报道,根据本实验结果,我们认为 PGE_2减少和 TXA_2/PGI_2比率失衡可能是大鼠烫伤后期肠粘膜损伤的原因之一。

关键词 烫伤;肠粘膜;花生四烯酸;代谢
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