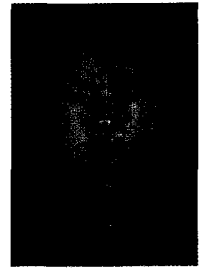


# 不同表皮对成纤维细胞增殖及胶原含量的影响

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**【摘要】** 目的 了解不同表皮对成纤维细胞(Fb)增殖的影响,并探寻其机制。方法 将10例增生期瘢痕患者自身的正常皮肤Fb+正常表皮、瘢痕Fb+瘢痕表皮进行非接触性共同培养,另培养不加表皮的瘢痕Fb,将这3个培养体系依次设为A、B、C组;另将10例成熟期瘢痕患者的皮肤同法培养,也建立3个培养体系依次为D、E、F组。检测各组Fb培养72h后的细胞数量、培养上清液中I型与Ⅲ型胶原含量及其比值的变化。结果 C组与A组、F组与D组比较,均表现为细胞数显著升高,培养上清液中I、Ⅲ型胶原含量上升,I型与Ⅲ型胶原比值下降( $P < 0.05$ );B组与C组比较,培养上清液中Ⅲ型胶原含量增高,I型与Ⅲ型胶原的比值下降( $P < 0.05$ ),细胞数和I型胶原含量两组相近;E组与F组比较,细胞数显著降低且上清液中I、Ⅲ型胶原含量下降( $P < 0.05$ ),两者比值无明显变化。B组与A组、E组与D组比较,细胞数及I、Ⅲ型胶原含量均显著增高( $P < 0.05$ ),I型与Ⅲ型胶原的比值均显著下降(A、B组为 $2.20 \pm 0.27$ 、 $1.16 \pm 0.21$ ,D、E组为 $2.18 \pm 0.14$ 、 $1.93 \pm 0.26$ , $P < 0.05$ )。结论 正常表皮可能通过产生某些活性物质调节Fb增殖及胶原合成,在防止瘢痕增生中发挥重要作用。

**【关键词】** 表皮; 成纤维细胞; 细胞增殖; 胶原

**Influence of epidermis from different sources on the proliferation and collagen content of fibroblasts** CHEN Jing, WANG Jia-han. Department of Burns and Plastic Surgery, Nanfang Hospital, Southern Medical University, Guangzhou 510515, P. R. China

**【Abstract】** Objective To investigate the influence of epidermis from different sources on the proliferation and metabolism of fibroblasts (Fb), and to explore its cause. Methods In a co-culture system, normal Fb (A group) and cicatricial Fb (B group) from 10 patients with scar during proliferative stage were co-cultivated with own normal skin epidermis (NSE), respectively, without direct contact. In control groups (C group), cicatricial Fb was cultured alone. Normal Fb and cicatricial Fb from 10 patients with scar during maturation period were co-cultured with own normal skin epidermis as mentioned above, and divided into D, E and F groups. The cell number of Fb, the amount of type I and III procollagen (PC I, PC III) in the supernatants and the PC I to PC III ratio were determined. Results To compare the C with A group and the F with D group, Fb in C and F groups exhibited increased cell number and PC I, PC III amounts ( $P < 0.05$ ), and decreased ratio of PC I to PC III ( $P < 0.05$ ). To compare the B with C group, PC III contents in the cell supernatant was increased ( $P < 0.05$ ), and the ratio of PC I to PC III decreased in B group ( $P < 0.05$ ), there were no obvious difference in Fb cell number and the amount of PC I contents between B and C group. To compare the E with F group, the cell number of Fb, as well as PC I and PC III contents in cell supernatant were obviously decreased in E group ( $P < 0.05$ ), but no obvious decrease was observed in the ratio of PC I and PC III. To compare the B with A group and the E with D group, the cell number and the PC I and PC III contents in B and E groups were evidently increased, while the ratio of PC I to PC III decreased markedly ( $2.20 \pm 0.27$  vs  $1.16 \pm 0.21$  in A, B group,  $P < 0.05$ ;  $2.18 \pm 0.14$  vs  $1.93 \pm 0.26$  in D, E group,  $P < 0.05$ ). Conclusion Normal epidermis may play an important role in preventing hypertrophic scar by producing some bioactive substances.

**【Key words】** Epidermis; Fibroblasts; Cell proliferation; Collagen

瘢痕性修复是皮肤损伤达深层真皮后创面自行愈合的结果。只要皮肤损伤不伤及真皮深层(如浅Ⅱ度烧伤),创面可在2周内再上皮化而无瘢痕形成;如果皮肤创伤严重导致完整表皮在2周内无法重新形成,创面成纤维细胞(Fb)将活化、增殖,形成

肉芽创面并最后转化为瘢痕组织,后者还将在一定时间内继续增大。随着时间延长,瘢痕表皮层结构逐渐接近正常表皮,瘢痕也趋于平坦、颜色变白。这些现象提示,皮肤表皮可能发挥着调节Fb增殖代谢的作用,推测正常表皮结构的长时间缺乏应该是体表瘢痕形成的首要因素。2005年笔者曾提出利用预处理表皮预防外科切口瘢痕增生的一种较为有效

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