

论文

不同中波紫外线对豚鼠皮肤色素沉着及 α -黑素细胞刺激素表达的影响

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摘要:

目的 探讨不同剂量定向中波高能紫外线及311nm窄谱中波紫外线(NB-UVB)照射对豚鼠皮肤色素沉着及表达 α -黑素细胞刺激素(α -MSH)的影响。方法 以正常棕黄色豚鼠为实验模型,分为定向中波高能紫外线高、低剂量组,NB-UVB高、低剂量组及空白对照组进行照射,分别采用肉眼评估及黑素颗粒染色(Fontana Masson法)研究其致色素沉着作用;通过免疫组化法检测豚鼠皮肤中的 α -MSH表达情况。结果 各组的色素沉着评分、黑素颗粒含量差异均有统计学意义($P<0.01$),定向中波高能紫外线高、低剂量组之间差异无统计学意义($P>0.05$),但均高于NB-UVB组($P<0.05$),且NB-UVB高剂量组高于低剂量组($P<0.05$);各组的 α -MSH免疫组化计分差异有统计学意义($P<0.01$),定向中波高能紫外线组高于NB-UVB组($P<0.01$),但每种光源不同剂量组之间差异无统计学意义($P>0.05$)。结论 定向中波高能紫外线在致色素沉着作用方面优于NB-UVB;两种紫外线均可促进表皮中 α -MSH的表达,且定向中波高能紫外线作用更为显著。

关键词: 紫外线;豚鼠;角质形成细胞;色素沉着; α -黑素细胞刺激素

Effects of ultraviolet irradiation at different wavelengths on the melanin level and expression of α -melanocyte-stimulating hormone in the skin of guinea pigs

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Abstract:

Objective To study effects of various dosages of targeted high-intensity UVB and 311nm narrow band UVB (NB-UVB) on hyperpigmentation and expression of α -melanocyte-stimulating hormone(α -MSH) in the skin of guinea pigs. Methods Five isolated areas were selected on the skin of brownish guinea pigs, and treated with different dosages of targeted high-intensity UVB and NB-UVB. Hyperpigmentation was evaluated by visual assessment and Fontana-Masson staining, and expression of α -MSH was determined by immunohistochemistry. Results Hyperpigmentation scores and melanin contents among the 5 groups were significantly different($P<0.01$). There was no statistically significant difference between the high dosage and low dosage groups of targeted high-intensity UVB($P>0.05$). However, they were significantly higher in targeted high-intensity UVB groups than in NB-UVB groups ($P<0.05$), and significantly higher in the high dosage group than in the low dosage group of NB-UVB ($P<0.05$). Immunohistochemical scores of α -MSH among the 5 groups were significantly different($P<0.01$), and they were significantly higher in targeted high-intensity UVB groups than in NB-UVB groups ($P<0.01$). However, there was no statistically significant difference between the high dosage and low dosage groups of each wavelength ($P>0.05$). Conclusions Targeted high-intensity UVB phototherapy is more effective than NB-UVB to induce experimental hyper-pigmentation. Each kindof ultraviolet light can up-regulate expression of α -MSH in the epidermis, and the effect of targeted high-intensity UVB is better than that of NB-UVB.

Keywords: Ultraviolet; Guinea pigs; Keratinocytes; Hyperpigmentation; α -Melanocyte-stimulating hormone

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