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神经肌肉促进技术与脑梗死大鼠偏瘫侧肢体骨密度和血瘦素水平 [点此下载全文](#)

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摘要:

摘要目的: 探讨神经肌肉促进技术对脑梗死大鼠偏瘫侧肢体骨密度和血瘦素水平的影响。**方法:** 40只老年雌性Wistar大鼠随机分为假手术组10只和脑梗死模型组30只, 用线栓法致大脑中动脉闭塞制备偏瘫大鼠模型, 随机分为对照组、常规治疗组、常规治疗加神经肌肉促进技术治疗组(综合组)。在治疗半个月、1个月、2个月、3个月4个时间点, 通过测定偏瘫肢体近端骨密度(BMD)、血清总碱性磷酸酶(ALP)、骨碱性磷酸酶(BALP)、骨钙素(BGP)、白介素-6(IL-6)观察骨质疏松情况, 同时也观察了血瘦素(LP)水平的变化。结果: ①治疗第1个月起, 常规治疗加神经肌肉促进技术组血清BGP、BALP和ALP水平较对照组明显增高; 治疗第2月起, 常规治疗组和常规治疗加神经肌肉促进技术组骨密度、BALP和ALP水平明显高于对照组; 治疗第3个月时, 常规治疗加神经肌肉促进技术组骨密度、血清BALP和ALP水平明显高于常规治疗组。治疗第1个月起, 常规治疗加神经肌肉促进技术组血清IL-6水平较对照组下降; 治疗2月起, 常规治疗组血清IL-6水平较对照组下降, 常规治疗加神经肌肉促进技术组与假手术组差异无显著性意义($P>0.05$); 治疗第3个月时, 两治疗组血清IL-6水平与假手术组差异无显著性意义($P>0.05$)。②治疗第1个月起, 常规治疗组和常规治疗加神经肌肉促进技术组血清LP水平明显高于对照组; 治疗第2个月起, 常规治疗加神经肌肉促进技术组血清LP水平明显高于常规治疗组; 治疗第3个月时, 常规治疗加神经肌肉促进技术组与假手术组血清LP水平差异无显著性意义($P>0.05$)。结论: 神经肌肉促进技术升高血清BGP、BALP、ALP水平, 降低血清IL-6水平, 改善了偏瘫侧肢体骨密度水平, 从而预防骨质疏松症的发生、发展, 其机制可能与上调血瘦素水平改善骨形成、抑制骨吸收有关。

关键词: [神经肌肉促进技术](#) [脑梗死](#) [血瘦素](#) [骨密度](#)

Effects of neuromuscular facilitation technique on bone mineral density of paralyzed limb and expression of serum leptin level following cerebral infarction in rats [Download Fulltext](#)

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Abstract:

Abstract Objective: To investigate the effects of neuromuscular facilitation technique on bone mineral density(BMD) of paralyzed limb and expression of serum leptin(LP) level following cerebral infarction in rats. **Method:** Acute cerebral infarction was modeled in aged female Wistar rats using permanent middle cerebral artery occlusion(PMCAO) technique. Forty rats were randomly divided into sham operation group, control group, conventional treatment group, conventional treatment combined with neuromuscular facilitation technique group(combined treatment group), each group had 10 rats. The conditions of osteoporosis were examined by measuring BMD of proximal paralyzed limb, serum total alkaline phosphatase (ALP), bone alkaline phosphatase (BALP), osteocalcin (BGP), interleukin -6 (IL-6) after treatment for 0.5, 1, 2, and 3 months. In addition, the expression of LP was determined by enzyme-linked immunosorbent assay at different time points. **Result:** ① After 1 month of treatment, the expressions of serum BGP, BALP and ALP in combined treatment group were significantly higher than that in control group; after 2 months of treatment, compared with control group the expressions of serum BALP, ALP and BMD elevated remarkably in combined treatment group and conventional treatment group; after 3 months of treatment, it were higher in combined treatment group than that in conventional treatment group. After 1 month of treatment compared with control group, the expression of serum IL-6 decreased in combined treatment group; after 2 months of treatment that decreased in conventional treatment group, there was no significant difference between sham operation group and combined treatment group; after 3 months of treatment there was no significant difference of the expression of serum IL-6 in sham operation group and two treatment groups. ②After 1 month of treatment the expression of serum LP was significantly higher in two treatment groups than that in control group; after 2 months of treatment it was significantly higher in combined treatment group than that in conventional treatment group; after 3 months of treatment there was no significant difference between sham operation and combined treatment group. **Conclusion:** Neuromuscular facilitation technique can improve BMD of hemiplegic limb after cerebral infarction by increasing serum BGP, BALP, ALP levels and decreasing serum IL-6 level, thereby preventing osteoporosis occurrence and development, which may be associated with up-regulation of expression of LP to promote the proliferation and differentiation of osteoblasts and the bone formation as well as inhibit the absorption of osteoclast.

Keywords: [neuromuscular facilitation technique](#) [cerebral infarction](#) [serum leptin](#) [bone mineral density](#)

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