

노인재활

게시일시 및 장소 : 10 월 18 일(금) 08:30-12:20 Room G(3F)

질의응답 일시 및 장소 : 10 월 18 일(금) 10:00-10:45 Room G(3F)

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Correlation between vitamin D deficiency and mobility outcome after hip surgery in elderly patients

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Introduction

vitamin D is important for calcium homeostasis and muscle function. Vitamin D deficiency is thought to negatively associated with functional outcomes in elderly patients after hip fracture. However, many studies showed short-term outcome improvement. We therefore conducted a prospective study to investigate the association between serum calcifediol level and the mobility recovery at 6 months after hip fracture surgery and rehabilitation in elderly patients.

Methods

Forty eight participants aged 65 years or over who underwent surgery and rehabilitation for hip fracture were followed up in one university hospital. Bone mineral density for osteoporosis detection was measured by dual-energy X-ray absorptiometry (DXA) and laboratory findings (vitamin D, Parathyroid hormone; PTH, total protein, albumin) were evaluated before hip surgery. Mobility outcome (KOVAL) was measured before surgery (pre-KOVAL), at rehabilitation discharge (2weeks after surgery, post-KOVAL) and at 6 months after surgery (6M-KOVAL). we classifies T scores as osteoporosis at or below -2.5 standard deviation and defined vitamin D deficiency as a serum calcifediol below 20 ng/mL and PTH deficiency as a PTH level below 15 pg/mL.

Results

Among 48 patients, 29 participants (60%) were found to have vitamin D deficiency on first to three preoperative day and 11 patients (23.4%) were evaluated as PTH deficiency. Thirty six patients (75%) had osteoporosis. Vitamin D deficiency group was significantly associated with 6M-KOVAL (deficiency group: 4.07 ± 2.05 vs. non deficiency group: 2.63 ± 1.74 , $p=0.015$). However, PTH deficiency group was not significantly associated with 6M-KOVAL (deficiency group: 4.27 ± 2.15 vs. non deficiency group: 3.33 ± 1.97 , $p=0.150$). In multivariate analysis integrating age, sex, weight, osteoporosis, pre-KOVAL, post-KOVAL and 6MKOVAL, vitamin D deficiency before surgery was a significant risk factor for pre-KOVAL [OR 0.547 (0.309-0.968) P = 0.038] and 6M-KOVAL [OR 2.030 (1.205-3.420) P = 0.008].

Conclusion

We has demonstrated that vitamin D deficiency on pre-operative day was a independent risk factor for worse mobility outcome at 6 months after surgery in elderly patients although they underwent hip fracture operation and rehabilitation management. A sufficiently large sample size will be necessary to produce results of future studies.