Time to Union by RUSH score after Hip Fracture between Primary and Secondary Osteoporosis

Science Metadilogkul[1], Chittawee Jiamton[1], Charoenchai Pakpianpairoj[1], Nuttavut Chavalparit[1], Putthi Tantikosol[1], Ukrit Sribuntao[2], Somsak Leechavengvongs[1].

INTRODUCTION: The Radiographic Union Score for Hip (RUSH) is a previously validated outcome instrument designed to improve intra- and interobserver reliability when describing the radiographic healing of hip fractures. A threshold score of <18 was associated with nonunion. We sought to investigate time to union between primary and secondary osteoporotic hip fractures and what factor could affect time for healing.

METHODS: We studied prospectively 212 admitted older patients (mean age 72.3+8.8(SD) years; 80.8% women) with low energy trauma non-pathological hip fracture. Clinical examination was performed, haematologic, renal, liver, thyroid function tests, serum 25(OH)D, intact PTH, calcium, phosphate, magnesium and C-reactive protein(CRP) measured. Three reviewers (2 orthopedic surgeons and 1 radiologist) independently assessed fracture healing using sequential radiographs from 165 patients treated with internal fixation and also completed a checklist of RUSH score. Union time was defined when the score ≥18.

RESULTS: In the trochanteric compared to the cervical group, females were older than males. Percentage of primary and secondary osteoporosis was 55.1% and 44.9% respectively. Most common cause of secondary osteoporosis was hypovitaminosis D (25(OH)D <30 ng/mL)(93.0%). Hypovitaminosis D was present significantly more in trochanteric group 50.9% versus cervical group 23.1% (p<0.001). Average time to union with RUSH score was 15.7 weeks (range 10.2-19.5 weeks). In multivariate subgroup analysis, coexistence of hypovitaminosis D and elevated PTH was a strong predictor for shorter time to union compared to blunted PTH response (OR=3.5; 95% CI 1.5-80; p=0.005).

CONCLUSION: Amidst a wide range of clinical and routine laboratory variables, we were able to detect one of the differences between two main osteoporosis types in terms of the potential of fracture healing. Shorter hip fracture union time is significant associated with coexistence of hypovitaminosis D and elevated PTH.

เสนอโดยนางสาวซายน์ เมธาดิลกกุล นายแพทย์ชำนาญการ โรงพยาบาลเลิดสิน
ในการประชุม The 7th FFN Global Congress 2018 ซึ่งจัดขึ้นระหว่างวันที่ 1 – 7 กรกฎาคม 2561 ณ ไอร์แลนด์