Reviewer's report

Title: Time Course of 1,25-(OH)2D (Vitamin D) as well as PTH (Parathyroid Hormone) during Fracture Healing of Healthy and Osteoporotic metaphyseal human Bone

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Reviewer: Koshi Kishimoto

Reviewer's report:

The authors examined serum 1,25-(OH)D and PTH concentration during fracture healing process in healthy and osteoporotic patients. The concept of this research sounds interesting. Unfortunately, this manuscript has a lot of serious drawbacks and misunderstanding in the area of subject.

Major essential revisions

1. In the first sentence of background, the authors claimed that low serum levels of 1,25(OH)2D vitamin D are suggested to be associated with reduced BMD. However, references #1 to 3 conducted clinical research using serum 25-hydroxy vitamin D. It is common to employ serum 25-hydroxy vitamin D concentration to evaluate patients' vitamin D status. The authors should be more careful to state the background of the research.

2. 1,25(OH)2 vitamin D concentration reflects patients renal function rather than the vitamin D status. However, the authors did not provided patients' serum creatinine or other evaluations. The readers are not sure that the average renal function in both healthy and osteoporotic groups are equal.

3. The authors categorized patients into osteoporosis or normal based on BMD data. However, the patients having fragility fracture in their proximal femur or humerus or distal radius should be diagnosed as osteoporosis even if their T-scores were within normal range. Most of the patients might be diagnosed as osteoporosis.

4. Table 1 should compare demographic data between two groups listing age, body weight, height, BMI, Lab data including serum creatinine, Alkaline phosphatase, Ca, P, baseline 1,25(OH)2D and so on.

5. The authors claimed that serum PTH increased during first week of fracture healing. However, no statistically significant change was not found in Figure 2.

Minor points

In Figure 2 & 3 ‘signifikance’ and ‘Kontr.’ should be significance and control, respectively.

In the tables of Figure 2 & 3, decimal points should be ‘.’.

Level of interest: An article of limited interest
Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interest.