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: Richard Stange

Reviewer's report:

The present study investigates the time course of 1,25-(OH)2D (Vitamin D) and PTH (Parathyroid Hormone) during fracture healing in osteoporotic versus nonosteoporotic fractures in a matched pair analysis of elderly Patients.

30 patients aged over 50 years who suffered a metaphyseal fracture of the proximal humerus, distal radius or proximal femur were included in the study. Osteoporosis was verified by DEXA measuring. Development of Bone Turn over Markers (BTMs) were examined over 8 week duration.

Serum values of PTH showed an increase in the first week after fracture followed by a slight decline up to eighth week. Serum values of 1,25-(OH)2D showed a slight decline up to eighth week and no significant differences between osteoporotic and healthy bone.

The study addresses an interesting topic, the monitoring of biochemical markers in the course of fracture healing in the elderly. The work is clearly presented, however, several issues need to be addressed:

Major Revisions:


Meller investigated 41 patients after proximal femoral fracture in the elderly. He found a decrease in serum levels of 1,25-(OH)2D over 8 weeks during fracture healing, no differences were seen in PTH levels. These different findings need to be discussed in the present study.

2. A control group of elderly without fracture a is missing, since especially Vit D levels are dependent on local effects like supply, sunshine ect..

3. The mean values have to be more discussed: is there a difference between old and young patients and is it influenced in the course of fracture healing?

Minor revisions:

4. The group of patients investigated is very heterogeneous, the subgroups (sex,
fracture type, osteoporosis) should be presented and discussed in more detail.

5. Did the OP group received any kind of specific osteoporosis medication that might have influenced the results?

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**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 interests