Reviewer's report

Title: Differences in osteogenic and apoptotic genes between osteoporotic and osteoarthritic patients

Version: 2 Date: 29 September 2012

Reviewer: Jose A. Riancho

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Giner et al report a gene expression study in bone samples from patients with osteoporotic fractures and with osteoarthritis. Authors are to be congratulated for trying to provide new data on this potentially important subject. However, the manuscript has some drawbacks that difficult the interpretation of results.

Major issues

1. More details about methods are needed.
   a) It is unclear to me if they used pooled RNA samples for both the PCR arrays and the single gene analyses. If they did so, it is hard to draw any conclusions, as the results are based on a single point comparison and the meaning of p-values are difficult to understand. Are p-values based on technical replicates or on biological replicates? If they did not use pooled samples, please clarify. Even if using pooled samples in PCR arrays may be acceptable for cost reasons, authors should analyze individual patient samples for single gene analyses.
   b) More details about statistics and the procedures used for the single gene analyses are needed.

2. In the abstract, please, specify if pooled or individual samples were analyzed. Also, specify which genes were studied.

Delgado-Calle J, Arozamena J, García-Renedo R, García-Ibarbia C,
Pascual-Carra MA, González-Macías J, Riancho JA. Osteocyte deficiency in hip

4. It is widely recognized that osteocalcin levels decrease with stress response.
Please, take it into consideration when reporting and discussing data on
osteocalcin expression.

5. Grammar and style need extensive review.
Minor comments
- What does the sentence "in both groups levels of 25(OH)D were lower than 20
  ng/ml" (page 4). Mean levels? Individual levels?
- How do authors explain the decreased expression of caspases? How long was
  the delay between fracture and surgery? Was it related to gene expression?
- Discussion is too long. Please shorten it and focus on the interpretation of the
data.
- Fig 1. OA bars do not have a SE line, why?.
- The ages of both groups are very different. Could it influence the results?

Level of interest: An article whose findings are important to those with closely
related research interests

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests