Reviewer's report

Title: Influence of arthritis and non-arthritis related factors on areal bone mineral density (BMDa) in women with longstanding inflammatory polyarthritis: a primary care based inception cohort

Version: 2 Date: 6 February 2010

Reviewer: Mary F Barbe

Reviewer's report:

Since this manuscript is already in a revision, I will be brief. The question posed by the authors is well defined and very important for the field of arthritis research. Their findings will be very enlightening clinicians seeking effective therapies for patients with rheumatoid arthritis and other forms of inflammatory arthritis. The methods are appropriate and well defined. The data is mostly sound – a few points still need to be better explained, as indicated below. Most limitations are also explored, but a few additions would greatly strengthen the paper, as indicated below. Nevertheless, this is an article of outstanding merit and interest in its field. The authors just need to wrap up a few more details.

Discretionary Revisions:
1. Since the sample size is relatively small, as stated by the authors, and has limited power to detect weak associations, they should actually give the power information. How close were they to 80% power, for examples?

Minor Essential Revisions:
1. Several abbreviations are not defined anywhere in the text. These include: NORA (should be added to page 4, line 13, where Norfold Arthritis Register is first used), CRP and ARA (not defined anywhere), IP (abbreviation shows up in discussion only, so I would advise just using “inflammatory polyarthritis” rather than “IP”), and ESR (not defined anywhere). Defining all of the abbreviations at first use will enhance readability.

2. The discussion states that no influence of corticosteroid use, those this might reflect the relatively low dose used in this group. The typical range of doses needs to be stated, or this point needs to be removed. However, since their finding of no influence is in contrast to some other studies, it would be strengthen their conclusions and might even drive the prescribing of lower steroid doses in the future if the range of dose that did NOT effect BMD was stated in either the results or the discussion.

Major Compulsory Revisions
1. The authors state that “Those with CRP greater than 10 at baseline had higher BMD” at both sites examined. Yet, table 2 does not show this finding. Perhaps this was an oversight. The discussion related to CRP is also confusing. They
state a positive relationship between CRP and bone mass, yet Table 2 does not indicate that statistical power of p<0.05 was reached. Confusing currently.

**Level of interest:** An article of outstanding merit and interest 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