Reviewer's report

Title: Efficacy of inhibition of IL-1beta in patients affected by rheumatoid arthritis and type 2 diabetes mellitus: cases report and discussion of literature

Version: 2 Date: 23 January 2015

Reviewer: Marianne Böni-Schmetzler

Which of the following best describes what type of case report this is?: Findings that shed new light on the possible pathogenesis of a disease or an adverse effect

Has the case been reported coherently?: Yes

Is the case report authentic?: Yes

Is the case report ethical?: Yes

Is there any missing information that you think must be added before publication?: Yes

Is this case worth reporting?: Yes

Is the case report persuasive?: Yes

Does the case report have explanatory value?: No

Does the case report have diagnostic value?: No

Will the case report make a difference to clinical practice?: Yes

Is the anonymity of the patient protected?: Yes

Comments to authors:

The case report „Efficacy of inhibition of IL-1beta in patients affected by rheumatoid arthritis and type 2 diabetes mellitus: cases report and discussion of literature“ by P. Ruscitti et al. describes 2 cases where the treatment of patients with RA and type 2 diabetes not only improves RA but also the metabolic state of the patients. This is a very interesting and important observation with the potential to make a difference to the clinical practice of these patients with both diseases. The following points need to be addressed or clarified:

1. The patients are treated with Anakinra which is an IL 1 Receptor blocker, which blocks action of both IL-1 receptor agonists IL-1beta and IL-1alpha. Throughout the manuscript and even in the title the authors use the term
„inhibition of IL-1beta“, this is not correct and should be changed in the whole manuscript to inhibition of IL-1. „IL-1beta inhibition“ should only be used if a IL-1beta specific antibody is used for treatment (i.e. Ilaris).

2. The improvement of metabolism is claimed to be due to the Anakinra treatment only. In case 2 the steroid dose was much higher before Anakinra and lower at the start of Anakinra. What was the dose of the steroids before and during Anakinra treatment and was it reduced under the Anakinra treatment? A reduction of steroids would also explain an improvement of the diabetes. Please clarify.

3. Body weight has a major impact on metabolic parameters, this is only briefly mentioned, please add the body weight as a figure.

4. The previously reported improvements of metabolism were reported to be mainly due to improved insulin secretion (Larsen CM et al. N Engl J Med 2007, 356:1517-1526). Did you measure C-peptide and insulin levels in these patients?

5. 2 of the authors of the present manuscript have previously published a similar observation in gout patients with type 2 diabetes, this should be included in the discussion.

6. Language revision of the whole manuscript is mandatory.

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

**Quality of written English:** Needs some language corrections before being published

**Declaration of competing interests:**

I declare that I have no competing interests