**Reviewer’s report**

**Title:** Parathyroid Function Index: A New Index For Differentiation of Primary and Secondary Hyperparathyroidism

**Version:** 0  **Date:** 21 Feb 2019

**Reviewer:** Elena Castellano

**Reviewer's report:**

The paper is well written, it shows that the PF index has a relevant diagnostic power for the differentiation of NPHPT vs VDSHPT.

It is important to note that this is a surrogate marker and it should not be used to guide the decision to start vitamin D treatment. Actually, it is to take into account that in this series, patients with SHPT had only mild vitamin D deficit, with 25OHD values similar to NPHPT and higher vs PHPT. In patients with severe vitamin D deficit, usually PTH levels are higher and P values lower: it is likely that in patients with SHPT and severe vitamin D deficit the PF index could lose its predictive value.

**Minor points:**

I suggest to add the normal values range in table 1

I suggest to cite and discuss the similarities with the paper by Madeo et al: Serum Calcium to Phosphorous (Ca/P) Ratio Is a Simple, Inexpensive, and Accurate Tool in the Diagnosis of Primary Hyperparathyroidism. Madeo B, Kara E, Cioni K, Vezzani S, Trenti T, Santi D, Simoni M, Rochira V. JBMR Plus. 2017 Nov 2;2(2):109-117

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes
Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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