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LETTER TO THE EDITOR

Reply to: The diagnostic accuracy of ^{18}F-FDG PET in cutaneous malignant melanoma

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Dear Sir,

Following the publication of our study entitled "Meta-analysis of the performance of ^{18}F-FDG PET in cutaneous melanoma" in the February 2010 issue [1], we reply to the comments presented in the above letter to the editor.

First, as described in the "Materials and methods" section, we performed a systematic search of the literature to identify relevant studies published between January 2000 and January 2006. Then, the meta-analysis was performed and the manuscript was prepared for publication. Finally, it was accepted for publication in 2009. Because of this 3-year delay between the literature search and publication, studies published after January 2006 were not included. The delay between the presentation of results as abstracts and full publication of results has been previously studied in the meta-analysis published by Scherer et al. [2]. In this meta-analysis, most studies were published in full within 2 years of their appearance as abstracts, although some studies presented a delay of up to 3 years. However, the results of our meta-analysis may be updated to include the most recent studies.

Second, the methodological quality criteria applied in our meta-analysis had been developed and applied in previous meta-analyses by Huebner et al. [3], Gould et al. [4], Delgado-Bolton et al. [5] and Schwimmer et al. [6]. These methodological quality criteria were developed to systematically analyse studies focusing on the performance of ^{18}F-FDG PET. They apply 7 guidelines which include 38 items, in order to extensively evaluate the methodological quality of the studies and, also, establish guidelines for carrying out methodologically rigorous studies. These criteria are based on evidence-based medicine criteria and, to the best of our knowledge, are not biased. Regarding the quality assessment of studies of diagnostic accuracy included in systematic reviews (QUADAS) criteria [7, 8], which is a 14-item instrument, it can be useful for the assessment of diagnostic accuracy studies and, if used extensively, it will facilitate comparison among meta-analyses. However, the QUADAS tool has not been designed specifically for ^{18}F-FDG PET. As evidenced in the meta-analysis by Kwee et al. [9], the QUADAS criteria present certain limitations when analysing ^{18}F-FDG PET diagnostic accuracy studies. These authors eliminated 3 of the 14 criteria and added another different one. This indicates that the QUADAS criteria may not be the optimal tool for evaluating the methodological quality in ^{18}F-

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FDG PET studies. Furthermore, the methodological quality criteria applied in our meta-analysis include certain guidelines and items not analysed or incomplete in the QUADAS criteria, such as: description of study design and patient selection criteria, characteristics of patient population finally studied, sensitivity and specificity data, and change in management information. These additional aspects not included in the QUADAS criteria can be of relevance when assessing the methodological quality and establishing guidelines for performing methodologically rigorous studies on ^{18}F-FDG PET.

Third, regarding the end-points chosen for our meta-analysis, it would have been very interesting to analyse the diagnostic performance of ^{18}F-FDG PET depending on the American Joint Committee on Cancer (AJCC) stage. Unfortunately, most of the original papers did not supply enough information on the AJCC stage of the patients included. Many studies included heterogeneous populations regarding the AJCC stage and the results of the ^{18}F-FDG PET were not presented independently for each AJCC stage. Therefore, it was not possible to study this end-point. If future studies include enough details of population characteristics and present the results of sensitivity and specificity for each subgroup of patients, it will be possible to analyse this end-point in a meta-analysis.

Fourth, in our meta-analysis the quantitative analysis evaluated subgroups of studies that presented the same method of counting findings (patients, lesions, basins, etc.). We separately analysed like data (patients, lesions, basins, lymph nodes, areas or scans), because we considered the results of studies that referred to different data (patients, lesions, basins, etc.) not comparable. Because of this, the pooled data were reduced. However, we considered it methodologically more rigorous than pooling together different data.

Finally, we agree with the comment regarding the need for standardization in the reporting of studies to improve the information provided by each individual study, which will allow future meta-analyses and cost-effectiveness analyses to establish the role of ^{18}F-FDG PET.

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