Modulo per la sottomissione abstract di ricerca CLINICA

Titolo (massimo **15 parole**)

3D high-resolution post-contrast imaging at 3T for the delineation of enhancing brain tumours

Autori (cognome e iniziali, es: Grassi L.)

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Testo (massimo **250 parole**, preferibilmente in italiano (accettato anche in inglese), suddiviso in Introduzione, *Metodi*, *Risultati*, *Conclusioni* e *Finanziamento*

To prospectively investigate differences between the Magnetization-Prepared-Rapid-Gradient-Echo (MPRAGE) 3D-post-contrast T1-weighted technique recommended by the modified RANO criteria, and two other available techniques [Sampling-Perfection-with-Application-optimized-Contrasts-using-different-flip-angle-Evolutions (SPACE) and Volumetric-Interpolated-Brain-Examination (VIBE)], in the assessment of contrast-to-noise-ratio (CNR), total volume (TV) and margins extent delineation (MED) of brain primitive tumours (pT) and metastases, potentially amenable to surgical and/or conformal radiotherapy treatment.
Fifty-four contrast-enhancing lesions (38 pT and 16 metastases) were detected in 37 patients using 3T MRI with MPRAGE, VIBE and SPACE sequences randomly acquired 5 minutes after administration of gadobutrol. Lesions CNR and TV segmentation were performed by an experienced neuroradiologist using a validated semi-automated tool (SmartBrush, Brainlab) followed by manual refinement. For each combination of sequence pairs, MED mismatch was quantified using subtraction volumetric maps of the segmented lesions. Mann-Whitney and paired-samples Wilcoxon non-parametric tests were used to investigate between-sequences discrepancies in CNR, TV and MED subtraction volumes.
In either pT and metastases, CNR was higher in both SPACE and VIBE compared to MPRAGE ($p<0.001$ and $p=0.001$, respectively). Larger TVs were obtained with SPACE compared to MPRAGE for both pT ($p=0.007$) and metastases ($p=0.003$). Discrepancy in MED was also found, with SPACE significantly exceeding MPRAGE in both pT and metastases margins extent ($p=0.008$ and 0.01, respectively).
We found technique-related differences in the CNR, TV and MED estimates of both brain pT and metastases, when comparing SPACE and VIBE to MPRAGE. These findings may be relevant for treatment planning and response assessment.
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Visto superiore (prego indicare Nome e Cognome del superiore)

dr. med, Alessandro Cianfoni

Criteri per sottomissione Abstract:
NO Case report
NO Abstract senza nessun risultato
VISTO da un superiore

Invio Abstract