Relevance of Lymphoscintigraphy Quantification in Combined Diagnostics of Upper Limb Lymhedema

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Abstract:

Lymphoscintigraphy quantification is considered to be a sensitive approach, that can improve the diagnosis of upper limb lymphedema. Though none of the proposed quantification techniques showed such results that would cause to be adopted as a standard in general.

Designed methodology of quantification [1] was constructed under the restriction of routine applicability, i.e. the limited amount of scintigraphic scans available for each limb. Bayesian quantitative lymphoscintigraphy uses prior knowledge and image sums, taken over three regions of interest (ROI), for estimating a three-parametric, model of the tracer accumulation [2]. Basic characteristics of estimated time-activity curves in ROIs are evaluated as potential quantitative indicators of the limb state.

Relevance of lymphoscintigraphy quantification in combined diagnostics is inspected by its contributions to qualitative scintigraphy and, routinely available, clinical findings about early stages of upper limb lymphedema. Qualitative scintigraphy complete data record by the observed-nodules number and categorized dermal backflow. The related clinical data include categorized therapy history, subjective feelings and clinical findings [3]. Data were used for prediction of subjective staging provided by experienced clinician and by scintigraphic expert by means of classifier. Its parameters and structure were estimated and the number of coincidences of predictions and subjective staging evaluated.

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References

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