Automatic Data Processing of RI Dynamic Study (Processing of Renal Function Data)

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The RI dynamic study of the renal function with scintillation camera has been extensively performed, because it is superior, in that not only the function but also the morphological information of the kidneys are obtained. The analysis of renal function requires much trouble and time, because the region of interest (ROI) has to be set up from the information obtained, and functional curves on ROI have to be prepared. Therefore, in this study the author tried to classify the functional curve pattern on ROI by processing with a computer.

Method: 300–500 μCi of ^{131}I-Hippuran was injected intravenously and the scintiphotographic images were accumulated by scintillation camera and CDS-4096 every 10 seconds for 16 minutes while the information was simultaneously being recorded on magnetic tape. The magnetic tape was processed using an IBM370–135 computer. The ROI was determined by the following process: At first, the images were accumulated from 2 to 8 minutes, and after the process of smoothing the peak count was obtained. The author decided both kidney regions by determining the outline formed by the points which were more than 30% of the count. The curves of the selected areas were drawn, from which parameters such as peak time, peak count, and the time to 1/2 peak count were calculated. The pattern was classified into sic (N, M1, M2, Mm, ML, and L), mainly according to the pattern classification of Minami.

Result: As a result of clinical data analysis by this method, the ROI could be obtained automatically. The pattern was classified into six by parameters obtained from the functional curves on ROI.

Myeloscintigraphy Introduced into The Computer System

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Although myelography has been recognized as the most useful tools in diagnosing spinal diseases, it is also known to have unavoidable side-action and to cause hardship on the patients. On the contrary, myeloscintigraphy using isotope has none of these shortcomings. However, because

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