PET kinetic analysis
—Pitfalls and a solution for the Logan plot

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The Logan plot is a widely used algorithm for the quantitative analysis of neuroreceptors using PET because it is easy to use and simple to implement. The Logan plot is also suitable for receptor imaging because its algorithm is fast. However, use of the Logan plot, and interpretation of the formed receptor images should be regarded with caution, because noise in PET data causes bias in the Logan plot estimates. In this paper, we describe the basic concept of the Logan plot in detail and introduce three algorithms for the Logan plot. By comparing these algorithms, we demonstrate the pitfalls of the Logan plot and discuss the solution.

Key words: PET, kinetic analysis, Logan plot, receptor imaging