Use of the ROC curves for the evaluation of the Guillain-Barré diagnostic methods

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Introduction: The ROC (Receiver Operating Characteristic) curves are widely used to compare methods in search of greater specificity and sensitivity in which they are selected.

Objective: Use the latex agglutination test in the rapid diagnosis of Guillain-Barré Syndrome.

Materials and methods: For the diagnosis of Guillain-Barré, different methods were used, such as the clinical one, which is performed in routine or basic clinical laboratories, radial immunodiffusion and neurophysiological, which are not mutually exclusive. The total number of patients studied was 347 divided into two groups: a probable group formed by 31 patients and not probable formed by 316 patients. For the quantification of albumin by radial immunodiffusion in serum and cerebrospinal fluid NOR and LC Partigen® plates were used by Siemens (Marburg, Germany) and by agglutination with modified particles of HELFA latex (CIE, BioCubaFarma, Havana).

Results: The Guillain-Barré Syndrome rapid diagnostic latex agglutination test showed little difference between the areas under the curve contrasted with the method considered as reference. As the other tests were incorporated into the diagnosis by latex agglutination, the area under the curve was increased. The area under the curve of the latex agglutination method was 0.742, showing that the technique of agglutination in albumin latex in cerebrospinal fluid does not replace the simple radial immunodiffusion for the immunological diagnosis of Guillain-Barré Syndrome, but it does allow a diagnostic orientation as screening.

Conclusions: The latex agglutination test showed that it can be used for the rapid diagnosis of Guillain-Barré Syndrome.

Key words: Receiver Operating Characteristic curves, Guillain-Barré Syndrome, latex agglutination