Abstract

This diploma work focuses on the programming of a new method in clinical chemistry on the iCAP RQ MS. This automat, acquired recently by the HIB (laboratory of the Intercantonal Hospital of la Broye), will be used to determine levels of copper, zinc and selenium in serum. Mr. Jaquemet, head of the laboratory, would like to perform these tests in his laboratory, tests which are currently sent to Dr Risch laboratory.

The introduction of this new method of analysis requires the evaluation of several criteria such as precision, accuracy, linearity of the method as well as inter-sample contamination. A correlation with Dr. Risch's lab will be done. We will be able to determine if the performance of the automat is sufficient and if the method used is optimal to assay these analyzes.

The correct use of the automat, took a lot of time and various problems occurred during the start-up of it have delayed enormously the progress of the work. The few results obtained for the validation of the method are mixed. The method is neither precise nor accurate; indeed, the results demonstrate good repeatability but poor reproducibility. The comparison of the method as well as the inter-sample contamination, however, gives very good results. The inter-sample contamination, does not reflect the reality. The test was done using internal quality control with no high and low values. The measurement domain could not be defined. The results are therefore to be taken with reserve. The tests were done with too few values. These results just give you an idea of where you want to improve.

To carry out this work, the blood samples used were collected from blood serum with separating agar tubes that come from the metabolic center of Estavayer-le-Lac, but also from the different departments of the HIB.

Key words :

iCAP RQ MS
Clinical Chemistry
Analyses
Cuivre
Zinc
Sélénium