

COMPARISON OF THE STRATUS CS AND AxSYM ANALYZERS FOR THE DETERMINATION OF CARDIAC TROPONIN I IN PLASMA

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The Stratus® CS fluorimetric analyser, a system designed to meet the needs of STAT and POC testing allows the quantitative determination of cardiac markers on whole blood. The analyzer can also manage pre-centrifuged plasma samples.

In the present study, we used the Stratus CS to determine cardiac troponin I (cTnI) on whole blood and on pre-processed plasma drawn in the same patients. Our purpose was to check the similarity of the results obtained for both types of samples in the entire measuring range. We also aimed at comparing results from the Stratus CS with those yielded by the AxSYM analyzer. The comparison was performed in 56 patients with proven cardiac disease and 29 subjects without cardiac lesions (polytrauma, non cardiac surgery, renal insufficiency).

The correlation between whole blood and plasma on Stratus CS was excellent, either for cTnI results in the entire measuring range ($r^2 = 0.99$) or for values $< 0.15 \mu\text{g/L}$ ($n = 29$, $r^2 = 0.92$).

The correlation between cTnI results obtained on Stratus CS and AxSYM was excellent ($r^2 = 0.98$). The quality of the correlation decreased for results $< 2.0 \mu\text{g/L}$ on AxSYM ($r^2 = 0.79$) but there was no systematic bias towards one technique. Considering the respective threshold values on Stratus CS (upper reference limit : $0.08 \mu\text{g/L}$; cut-off for AMI : $0.4 \mu\text{g/L}$) and on AxSYM (URL : $0.4 \mu\text{g/L}$; AMI : $2.0 \mu\text{g/L}$), nine patients were classified in a different diagnostic category according to the technique used. In all these cases of discordance however, the Stratus CS was in agreement with the clinical diagnosis.

In conclusion, the Stratus CS yields reliable results in the clinically important range of concentration between the URL and the threshold for AMI. The agreement of the results between whole blood and plasma allows the Stratus CS to be used alternately on different specimens in the same patient.