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Comparative analysis of common biochemical assay results for venous blood and peripheral blood

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Abstract: Objective To investigate the comparability of the results of common biochemical items detected by Celercare M1 analyzer in the peripheral blood and the venous whole blood.

Methods The samples of peripheral blood and venous whole blood were collected from subjects, The biochemical items including Mg^{2+} , Cl^{-} , tCO_2 , K^{+} , Na^{+} , Ca^{2+} , α -HBDH, LDH, AST, CK, CK—MB, TP, ALB, TBIL, ALT, GGT, ALP, UREA, GLU, UA, CHOL, and HDL—C were determined by Celercare M1 analyzer, and the results were compared.

Results The tCO_2 results of venous blood was significantly higher than that of peripheral blood ($P < 0.05$). However, the results of α -HBDH, LDH, CK and CK—MB of venous blood samples were significantly lower than those of peripheral blood samples, and the difference was statistically significant ($P < 0.05$).

Conclusion The peripheral blood can replace venous blood for biochemical analysis on Celereare M1 analyzer, except for the electrolyte test items and cardiac enzyme items such as α -HBDH, LDH, CK and CK—MB.

Keywords: peripheral blood; venous blood; biochemical analysis