Pneumatic tube transportation (PTT) may induce hemolysis (H) in blood samples. We aimed to compare the H degree before and after PTT implementation in our hospital" Pasqualetti et al (2015).

Abstract:

BACKGROUND: Pneumatic tube transportation (PTT) may induce hemolysis (H) in blood samples. We aimed to compare the H degree before and after PTT implementation in our hospital.

METHODS: Hemolysis indices (HI) for all lithium-heparin plasma samples (P) drawn by the Emergency Department in 2-month periods were retrospectively collected and pre- (n=3579) and post-PTT (n=3469) results compared. The impact of PTT introduction was investigated on LDH , conjugated bilirubin (cBIL) (HIt, 30), K (HIt, 100) and ALT (HIt, 125). In addition, HI retrieved for P and paired serum samples collected in silica clot activator tubes (S) from the same venipuncture were compared in pre- (n=501) and post-PTT (n=509) periods.

RESULTS: Median (5-95th percentile) HI in P was significantly higher in post-PTT period [7 (0-112) vs. 6 (0-82), p<0.001]. Results reported as 'Hemolysis' in P increased from 6.6% in pre-PTT to 9.4% in post-PTT (p<0.001). Investigated tests gave the following rejection rates (pre-PTT vs. post-PTT): LDH, 13.4% vs. 18.8%, p<0.001; cBIL, 9.4% vs. 27.0%, p<0.05; K, 3.7% vs. 5.6%, p<0.001; ALT, 2.9% vs. 4.4%, p

CONCLUSIONS: In our setting PTT promotes H in P, increasing the rate of rejected tests. The use of S appears to protect against the hemolysing effect of PTT.

Reference:

Pasqualetti, S., Szőke, D. and Panteghini, M. (2015) Heparinate but not serum tubes are susceptible to hemolysis by pneumatic tube transportation. Clinical Chemistry and Laboratory Medicine. October 28th. .

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