Introduction:
Acute glycemic disorders should be early diagnosed and treated in Emergency Department (ED), especially hypoglycemia. Can capillary blood glucose (CG) replace plasmatic glucose (PG). The objective of this study was to compare capillary blood glucose with venous blood glucose.

Methods:
Methods: Patients with type 2 diabetes were included. We realize a capillary blood glucose with a glucose meter (acu-check active-Roche) and a concomitant determination of venous blood glucose with laboratory machine (synchrony CX3 delta system beckman coulter). A correlation study (Pearson correlation) between the two measurements was evaluated and linear fitting equation was established. The concordance was checked with Bland and Altman method.

Results:
During the 4 months of the study, 258 patients was included. The average age was 55 +/- 19 years old, with a sex ratio =1. Majority of patients (70%, n=182) had type 2 diabetes and 58% was treated with insulin. We found an excellent correlation between the two techniques with a Pearson correlation coefficient r= 0.96. To predict the PG from CG, we can use this equation: PG(g/l)=0.9979 CG(g/l)+ 0.08128 (R2=0.9207 ; p=0.0001). We noticed a good concordance between the two techniques especially in case of hypoglycemia and moderate hyperglycemia (figure 1). However, 11 releases were noted with a PG higher than 4g/l.

Conclusion:
In ED, the measurement of capillary glucose can exempt from venous blood glucose especially in case of hypoglycemia and moderate hyperglycemia.
Concordance CG vs PG (Bland and Altman Method)