

Quality control for routine coagulation tests

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What is Mean Normal Prothrombin Time (MNPT)?

It is geometric mean of PT of reference sample group

MNPT is the denominator used for calculation of International Normalized ratio (INR)

MNPT is a must for any lab doing coagulation studies

How do you do MNPT?

Collect citrated plasma of apparently healthy individuals (20 donors). Do PT and APTT of all these 20 cases. Take a mean. Do plus/minus 2 SD to establish normal reference range of PT

PT is reported in form of INR

$$\text{INR} = (\text{Test}/\text{MNPT})^{\text{ISI}}$$

For a small size laboratory: Commercially available lyophilized controls (normal and abnormal high)

For large sized laboratory (or a hospital based laboratory): Commercially available lyophilized controls (normal and abnormal high) **or** in-house normal pooled plasma can be used

Preparation of Normal Pooled Plasma

Collect citrated plasma from minimum six healthy donors

Pool them in a plastic container, mix and centrifuge at 1500 g for 10 min at RT

Estimate platelet count (platelet poor plasma $<10,000/\text{cmm}$), check PT and APTT values (should be within normal range)

Aliquot and store at -80 C

Thaw immediately, analyze with every batch (as a QC sample)

Monitor with successive runs

New lot of pool plasma should be analyzed parallel with older lot

Range, mean and $\pm 2\text{SD}$ of pool plasma is calculated after 20 successive readings

If control values go outside acceptable ranges:

- Check controls/pooled plasma for any deterioration
- Check expiry and stability of reagents
- Coagulometer problem

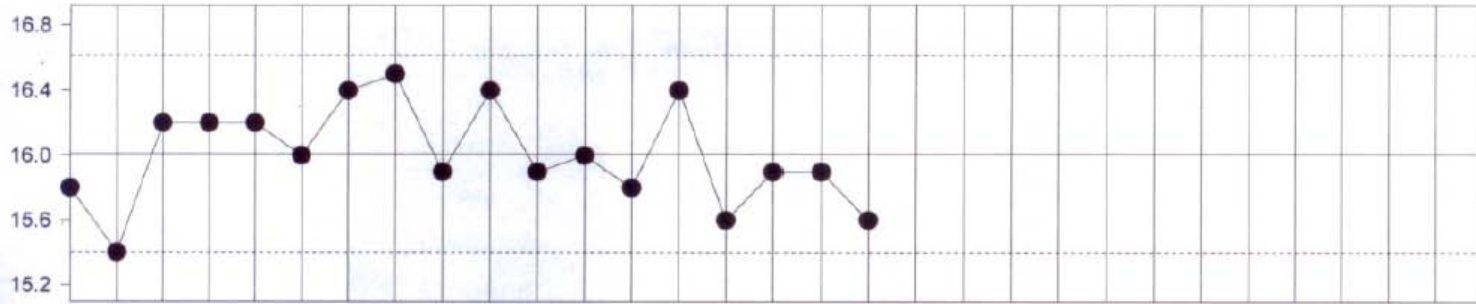
Plot LJ chart and calculate %CV

Based on monthly readings of pool plasma, plot LJ chart and calculate CVs

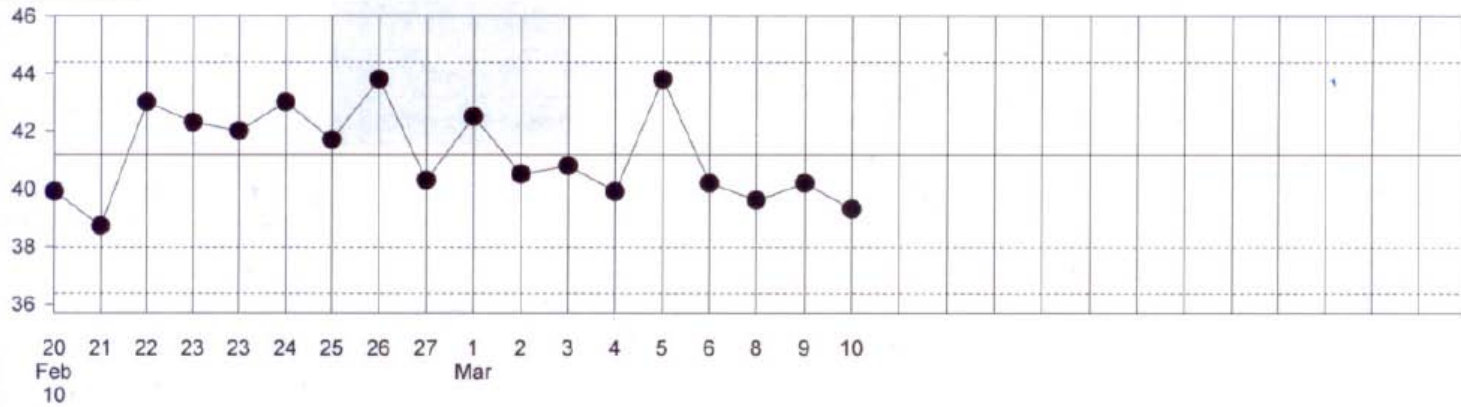
Monitor results

PT ACL7-1 BB QC charts

BB PT ACL 7000 (t)



BB PT ACL 7000 (t)



CV for our laboratory

PT ≤ 7.0

APTT ≤ 8.0

THANK YOU