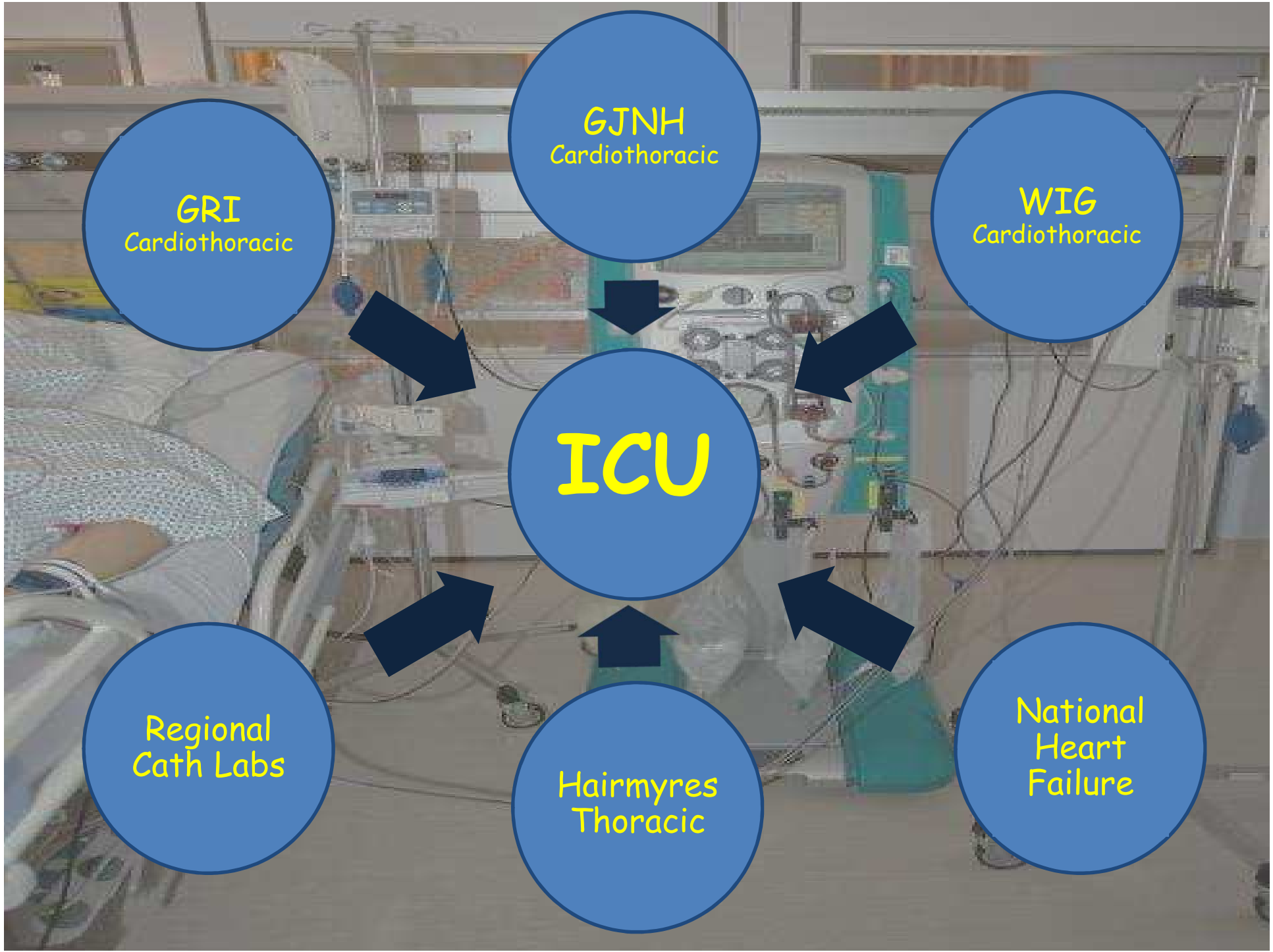


Are Haemofiltration Patients Adequately Anticoagulated?

Golden Jubilee National Hospital

SARAH JANE FAICHNEY
PHILIP MCCALL

GJNH GLASGOW



GRI
Cardiothoracic

GJNH
Cardiothoracic

WIG
Cardiothoracic

ICU

**Regional
Cath Labs**

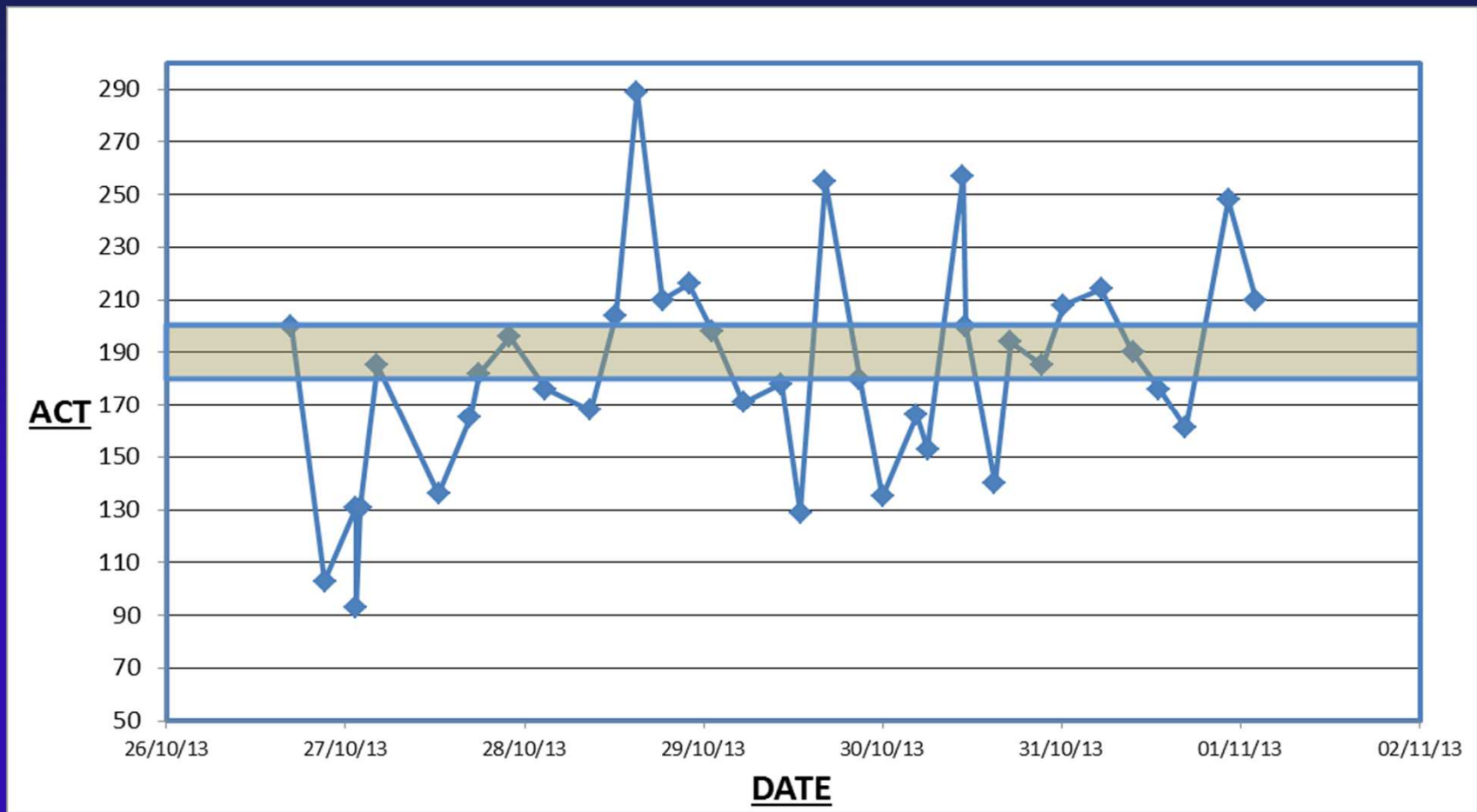
**Hairmyres
Thoracic**

**National
Heart
Failure**

Our Standard Regime

- Unfractured heparin infusion
- Regular(4-6hrly) ACT (Medtronic ACT plus) monitoring
- Ad hoc heparin dose adjustment

Patient 22 : Standard Regime Example

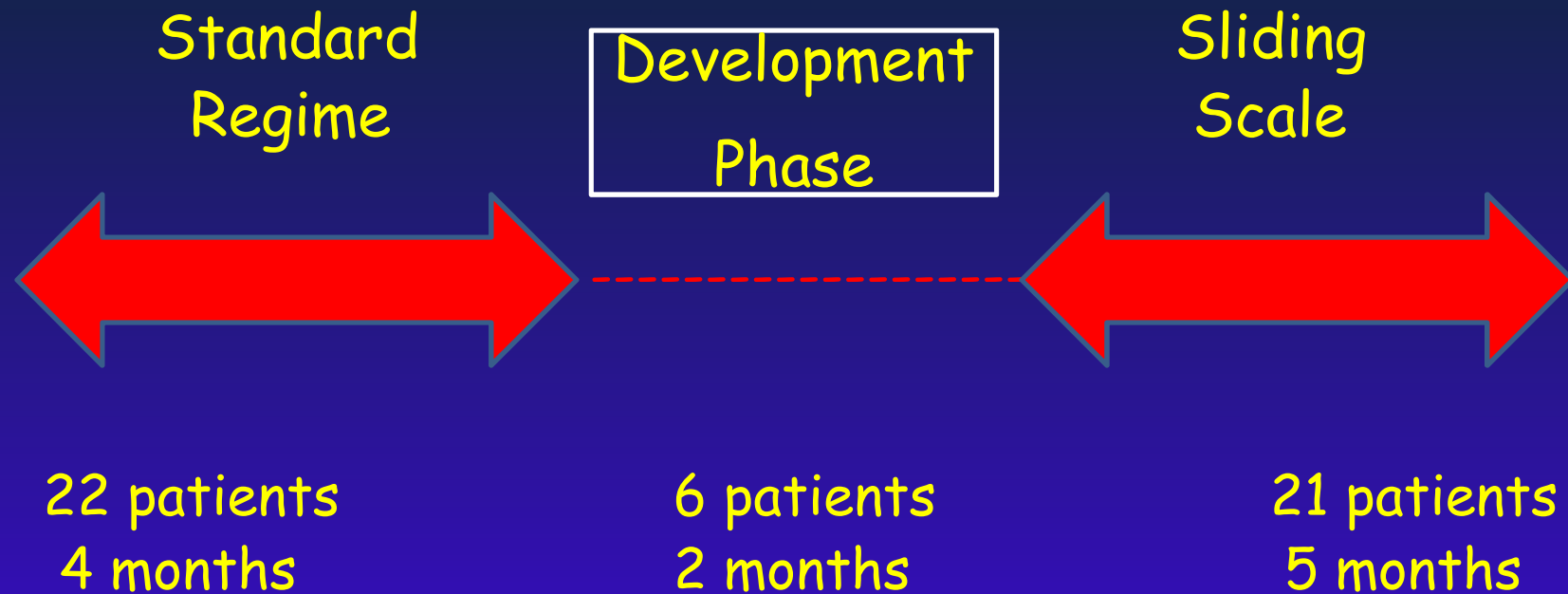


Heparin Regime

- Pre CVVH ACT measurement
- Weight based heparin infusion 10units/kg/hr if ACT <130
- Commencement of infusion delayed if ACT 130-220
- ACT after 1hr then dose by sliding scale

ACT (sec)	Rate Change (ml/hr)	Repeat ACT
<120	Increase by 0.2ml/hr	2 Hourly
120 - 140	Increase by 0.1ml/hr	2 Hourly
140 - 160	0 (no change)	2 Hourly once stable 4 Hourly
160 - 180	Decrease by 0.1ml/hr	2 Hourly
180 - 200	Decrease by 0.2ml/hr	2 Hourly
200 - 220	Decrease by 0.3ml/hr	2 Hourly
>220	Stop infusion for 60 mins then restart at 0.4ml/hr below the stopping rate	1 Hourly

Retrospective Audit



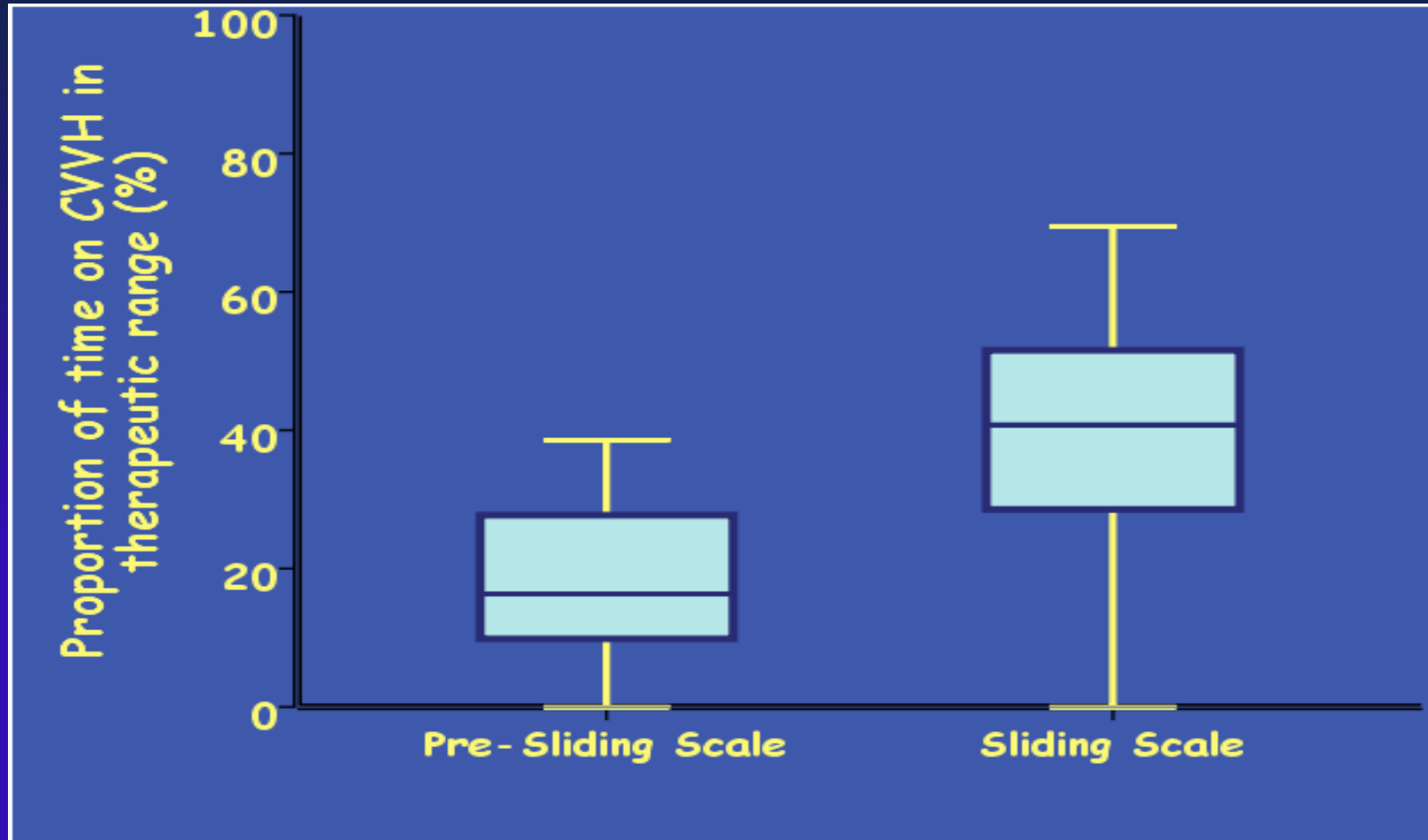
Comparison

- Level of Anticoagulation
- Filter Circuit Life
- Blood Products Used

Results Table

	Pre-Sliding Scale (Target ACT 180-200) <i>Median (IQR)</i>	Sliding Scale (Target ACT 140- 160)	
Number of patients	22	21	
Average time on CVVH (hours)	95.7 (41.5 - 215.8)	107.5 (42.3 - 154.2)	P=.68 (Mann-Whitney U-Test)
Time to first therapeutic ACT (hours)	27.4 (12 - 36.1)	11.9 (1.75- 21.9)	P <0.01 (Mann-Whitney U-Test)
Proportion of time in therapeutic range (%)	16.3 (9.7 - 26.4)	40.8 (24.9 - 52.2)	P <0.01 (Mann-Whitney U-Test)

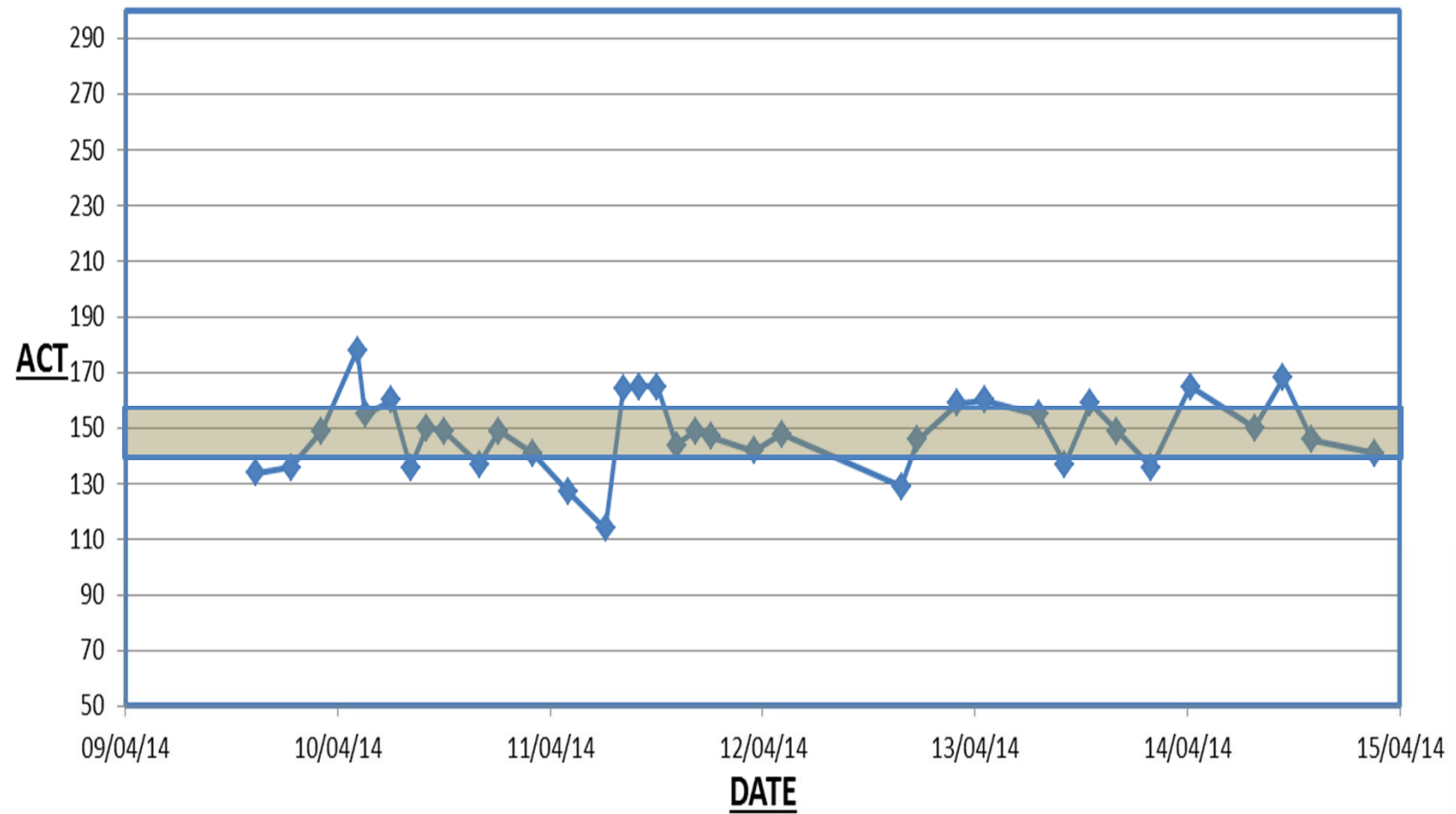
Results Graph



Pre and Post Comparisons

	Pre-Sliding Scale	Sliding Scale
Circuits Used (per group)	80	77
Average Life of Circuit (hrs)	34	33
Concentrated Red Cells (units per group)	75	76

Patient 19 : Sliding Scale Example



Conclusions

Anticoagulation in CVVH is poor
Sliding scale heparin dosage improves
CVVH anticoagulation

- ??significance for patient management
- Filter circuit life unchanged
 - Need for blood products unchanged

Discussion: Control of Anticoagulation

	Pre-Sliding Scale (Target ACT 180-200) <i>Median (IQR)</i>	Sliding Scale (Target ACT 140-160)	
Time to first therapeutic ACT (hours)	27.4 (12 - 36.1)	11.9 (1.75-21.9)	P <0.01 (Mann- Whitney U-Test)
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- Refined sliding scale**
- more stable ACT
 - ?? filter life
 - ?? blood products

Discussion: Nursing Implications

Staff changes in large nursing pool

- experience levels
- education needs
- supervision needs

Development of protocol based practice

Future Developments

Sliding scale modification

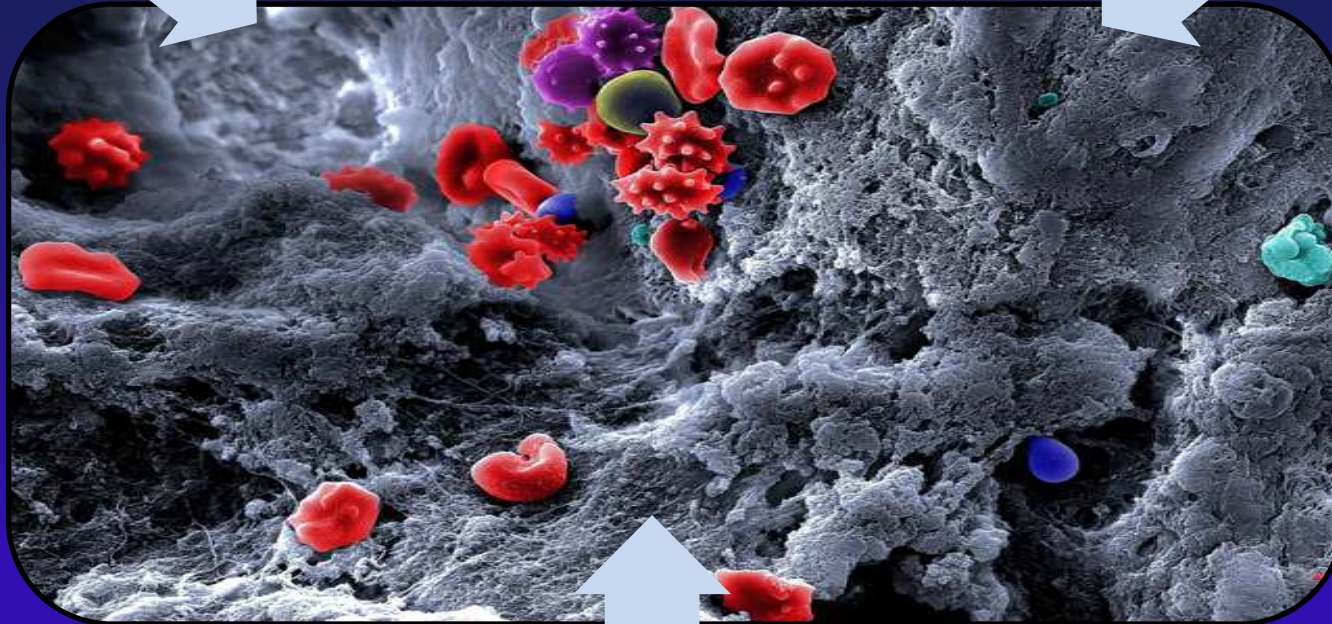
Rigid coagulation monitoring

Use of citrate / regional anticoagulants

Cause of "clogging"?

Anticoagulation

**Protein
Deposition**



**Membrane
Technology**

Results Table

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