

Routine coagulation screening is an unnecessary step prior to ERCP in patients without biochemical evidence of jaundice; a cross-centre study

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Introduction

- Guidelines suggest patients should have a coagulation screen within 72 hours of undergoing therapeutic endoscopic retrograde cholangiopancreatography (ERCP)
- We aimed to establish the incidence of deranged coagulation prior to ERCP and its relationship with bleeding complications



Figure 1. ERCP cholangiogram - calculi in CBD and cystic duct

Method

- Retrospective analysis of ERCP's performed at 2 NHS sites over 16 months
- Exclusion criteria: anticoagulation therapy (n=60), known bleeding disorder (n=2), incomplete data (n=43)
- Demographic data, pre-procedure bilirubin, prothrombin time (PT) and bleeding complications were recorded
- Final cohort of 793 ERCPs were divided into jaundiced and non-jaundiced groups for analysis
- Statistical analysis used Student's t-test and Chi Squared test (Fisher's exact test if groups contained ≤ 5 patients)
- P-value < 0.050 - considered significant
- PT $> 16.8s$ (INR > 1.5) - considered significantly prolonged

Table 1. Comparison of diagnosis and procedure between groups

	J	NJ	Difference ‡
Diagnosis			
CBD stones \pm cholangitis/gallstone pancreatitis	230	240	P=0.010
Malignancy/obstructive jaundice	169	83	P<0.001
Bile leak	11	32	P<0.001
Other	9	19	P=0.041
ERCP Procedure			
Sphincterotomy \pm stent	219	171	P=0.077
Stent/stent removal/stent change	143	148	P=0.130
Cholangiogram only/Other diagnostic	30	30	P=0.746
Abandoned	27	25	P=0.891

J, jaundiced; NJ, non-jaundiced; CBD, common bile duct; ‡, Chi-squared test in each case

Results

- PT was significantly higher in the jaundiced group
- 26.7% of the jaundiced group had prolonged PTs
 - 6.7% (n=28) had a PT > 16.8 seconds
- 5.9% of the non-jaundiced group had prolonged PTs
 - 1 patient had a PT > 16.8
- 5 major and 32 minor bleeding complications were observed with no differences between groups
- Only 1 minor bleeding complication occurred in patients with prolonged PT pre-procedure**
- Normal bilirubin was 99.7% (+/- 95% CI; 98.5-100) sensitive to predict a PT < 16.8 seconds
- Cost savings of **£14,350** could have been achieved with judicious use of PT screening in this cohort

Table 2. Comparison of jaundiced (J) and non-jaundiced (NJ) groups

	J	NJ	t-test (except ‡)
No. of patients	419	374	
Male: Female ratio	194: 225 (46.3% M)	137: 237 (36.6% M)	P=0.007‡
Mean age \pm SD	66.9 \pm 17.0 years	68.9 \pm 16.1 years	P=0.090
Mean bilirubin \pmSD (μmol/L)	126.9 \pm 113.0	10.5 \pm 4.8	P<0.001
Mean PT \pm SD (seconds)	13.0 \pm 6.3	11.0 \pm 1.2	P<0.001
Mean coagulation screens/patient	2.8 \pm 2.7	2.1 \pm 3.5	P<0.001

PT, prothrombin time; SD, standard deviation; ‡, Chi-squared test in this case

Conclusion

- Pre-ERCP coagulation screening should be reserved for jaundiced patients, those with a positive bleeding history or patients on anticoagulant therapy
- Selecting patients for coagulation screening will result in considerable cost savings without compromising patient safety (estimated **£868,500** annually in UK)

References

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