A 70 year old independent patient with no PMH other than AF presents acutely unwell with jaundice, pale stools and dark urine. His liver function tests are significantly deranged with INR 3.9, Bilirubin 456 and ALT 2260. Acute liver failure is suspected. There are no risk factors and no history of foreign travel. The patient is taking Rivaroxaban.

**The Clinical Dilemma:**
Kings college criteria for the diagnosis of acute liver failure relies on INR measurement\(^1\). Rivaroxaban confuses the interpretation by prolonging INR\(^2\).

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**What Happened Next?**
All regular medications were stopped and the patient was treated with n-acetylcysteine and intravenous vitamin K. INR remained elevated for several days suggesting genuine acute liver failure. Hepatitis A was diagnosed – Public Health England notified - Likely acquired from local cuisine (not confirmed)
The patient gradually improved and was discharged after a week long admission

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**Interpretation of INR with rivaroxaban in the context of acute liver failure due to hepatitis A**

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Rivaroxaban’s half life is 5-9 hours\(^3\), so ongoing derangement is more likely to represent true liver failure. 

Can be affected by acute liver failure so not necessarily useful\(^4, 5\).

Factor V level drops markedly with acute liver failure but are not affected by rivaroxaban.

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**Key Messages**

- If an urgent decision is needed regarding liver transplant, consider testing factor V levels to confirm acute liver failure.
- Hold rivaroxaban and all hepatotoxic drugs if acute liver failure is suspected.
- Hepatitis A Can Still Be Acquired in the UK

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**References**