"From the Trough"

Perioperative Interest Group Notes

Based on Cases discussed at the Weekly PIG Clinical Meeting on 12th July 2018.
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The imperfect opinions in these reports are only meant to stimulate discussion: - they should not be considered a definitive statement of appropriate standards of care.

Attendance: Lee-ann Kitto, Simon Campbell, Ben Bartlett, Ashok Dharmalingam, Dana Perrignon, Lucy Andersen, David Cottee, Claire Armstrong, Elyse Farrow, Anna Carter

TOPIC 1: **Is the procedure appropriate? & the causes of Iron Deficiency Anaemia**

A 59 year old male booked for gastroscopy and colonoscopy for investigation of iron deficiency anaemia has multiple comorbidities: - chronic renal failure (on dialysis), diabetes on insulin, atrial fibrillation on warfarin, previous PE's, obese OSA on CPAP, Pulmonary hypertension cognitive decline previous melanoma with axillary metastases 5 years ago plus others. Patient was originally booked 6 months ago and is now scheduled for these scopes. Originally seen in perioperative clinic 6 months ago and a detailed management plan including admission the night before for bowel prep and hydration, plus supervised dewarfarinisation was organised. It was anticipated that he will need to stay in hospital night post operatively as well. The procedure had been rescheduled multiple times due to acute medical problems since then. **Question: -** Is this procedure appropriate? What should be done here?

Discussion: - It is interesting to focus the discussion on the technical and organisational challenges of performing the procedure, but we are Doctors, not merely technicians. As 'perioperative physicians' there is a need to take a broader view of the appropriateness of the procedure and the necessity for the investigation for this 'soft' indication. Thus the first step should be to consult the booking physician and clarify with them the need for the investigation. (Update: - it transpired that the patient had the investigation (with normal findings!) while an inpatient in April. Although this had happened, the original booking for the investigation had not been cancelled, and thus he had been rescheduled. The patient was not aware that the procedure had been performed and was no longer necessary. An example of the fallability of the hospital booking management system.

Question 2:- Is iron deficiency anaemia an indication for gastro colonoscopy necessarily? **Discussion** Conventionally, iron deficiency anaemia has been regarded as an indication for endoscopy for GI pathology (in post-fertile females and males). Understanding of the metabolism of iron has recent changed, particularly the central role of hepcidin as an inhibitory control mechanism for iron absorption, and release of iron from ferritin and other iron stores. Hepcidin rises in any inflammatory state. From a teleological point of view, this may provide an advantage by lowering serum iron concentrations. Most infective organisms are 'obligate siderophiles'. I.e. multiplication is enhanced by high environmental iron concentrations (which is why blood is added to agar as a bacterial culture medium). Thus lowering iron concentration gives a relative advantage to the host against infective organisms. (Note this has led to an unintended consequence of treatment of iron deficiency anaemia in third world, where malaria increased.) This host defence mechanism of lowering iron and impeding iron absorption applies in any inflammatory state. Thus any patient with a chronic inflammatory state may have impaired iron absorption due to their inflammatory state with raised hepcidin concentrations. Hence iron deficiency anaemia may not be as strongly suggestive of malignancy or other GI pathology in such a patient compared to a patient without chronic inflammation.

TOPIC 2: **Cardiology consultation required?**

A 75 year old male is booked for EVAR for aortic aneurism revision. He has an endo leak 1B and needs extension of EVAR by cut down in the groin. Due to obesity this will require either a GA or a spinal anaesthetic. The patient is a classical vasculopath and has very limited exercise tolerance with pitting oedema to the knees, sleeps in a recliner chair, is now on frusemide 120mg BD plus other cardiology medications, all given by his

General Practitioner. He has not seen a cardiologist, although his medication appears to be appropriate. A recent echo cardiogram shows mildly reduced ejection fraction and is otherwise relatively "good". Should we go ahead?

Discussion: - Although there appears to be optimal cardio logical management, in view of the severity of the patient symptoms it would seem appropriate to have a cardiology review prior to proceeding for this complex procedure that may have adverse outcomes. Cardiologists see many patients for much "softer" indications! Although there is some urgency for the procedure, there is some time to wait. Hence it is appropriate to 'insist' on cardiology review - postpone the procedure for this.

TOPIC 3: RELIEF - Authors concerns

The recent publication of the results of the RELIEF Trial (N Engl J Med 2018;378:2263-74) has received a considerable publicity. The trial demonstrated that the 'restrictive' fluid regime on day of surgery produced an increase rate of AKI and short term dialysis, although there was no difference in long term outcomes. The authors of the trial recommend that perioperative fluid management should thus be "moderately liberal". Although this represents a swing back from the move to restrictive regimes in recent years, there is now some concern (being discussed amongst the Authors) that this may be interpreted as supporting the excessively 'generous' fluid administration of the past. The recent re-evaluation of fluid management commenced based on work by Birgitte Bandstrup 15 years ago, where colorectal patients were given excess fluids over 4 to 5 days post operatively, and showed an increase rate of anastomotic breakdown. The 'liberal' regime in the RELIEF trial was still less than had been common at that time. Furthermore, and in particular, the RELIEF regime only studied the day of surgery up to 24 hours after surgery. An appropriate response to findings of the RELIEF trial would be to be moderately liberal on the day of surgery, however then aim for neutral fluid balance from then, and especially to avoid excessive salt and water administration once the patient is taking oral fluids.

(Note that John Hunter was a significant contributor to the RELIEF trial. Thanks to all for this important work!)