

Increasing the Awareness of Acute Kidney Injury (AKI)

Nicole Blakemore and Professor Sunil Bhandari

Introduction

The study considered the knowledge of AKI amongst final year medical students & foundation doctors & the potential for improvement.

Previous research has shown that knowledge of AKI in these groups is lacking in the UK. Approaches to improve knowledge of AKI within the trust include posters and education sessions, yet deficiencies in essential knowledge persist.

Methods

The impact of an objective, multiple choice questionnaire assessment (Figure 1) both before and after the distribution of a clinical guideline was studied. This was based on best published practice instructing foundation doctors and medical students on important factors relating to AKI.

- 33 doctors and 31 medical students responded to the initial questionnaire
- 29 doctors and 29 medical students responded to the follow-up questionnaire, after introduction of the guideline

Questions 6 and 7 (Figure 1) were included in the follow-up questionnaire only.

The guideline subsequently distributed (Figure 2) addressed all questions asked in the questionnaire and matched current KDIGO guidelines. This was distributed to all foundation doctors and final year medical students via email.

Results

There was a 5.6% overall increase of correct answers after the guideline was distributed in the final year medical student group, but no change in the foundation doctor group (Table 1). However, knowledge was lacking in both groups in all areas examined.

Points of interest included:

- A lack of awareness of acute hyperkalaemia (Tables 2&3). This was identified by 69% of medical students and 53% of foundation doctors after the guideline.
- A lack of recognition of fluid overload. In Q2, oedematous patients were amongst the least identified, along with selection of furosemide in Q5. Selection of both answers in both groups increased after introduction of the guideline.
- A low selection rate for 8.4% bicarbonate solution in Q5
- Approximately 40% of students and 20% of doctors asked had seen the guideline, with the majority of these finding the information to be of use

Figure 1 Questionnaire on Acute Kidney Injury

I am a fourth year medical student, investigating AKI knowledge in Foundation doctors. Would you be able to answer the following questions?
Your time and help are greatly appreciated.

1) What is an acute kidney injury?
• Loss of kidney function and retention of protein and electrolytes
• Reduction in urine output/ 50% increase in creatinine within a week
• 20% decrease in eGFR within a week

2) Can you list some of the patient groups at risk?
Elderly Patients receiving nephrotoxic drugs CKD
Diabetics Younger patients ICU
Contrast agent used recently Alcoholics
Patients with a hernia Oedematous patients

3) At which value would treatment for acute hyperkalaemia be indicated?
• >7.0 mmol/L or >6.0mmol/L with ECG changes
• >6.5 mmol/L or any ECG changes suggestive of hyperkalaemia
• Any changes on ECG suggestive of hyperkalaemia

4) How can fluid status be assessed?
JVP NEWS Radial pulse BP Heart sounds
Neurological exam Skin turgor

5) Which could be used to treat fluid imbalance?
• Give 0.9% sodium chloride over half an hour
• Give 8.4% sodium bicarbonate over half an hour
• Give 80mg furosemide
• Give Hartmann's solution

6) Have you seen the guidance sent to you via email? Yes/No

7) If so, have you found this useful? Yes/No

Table 1

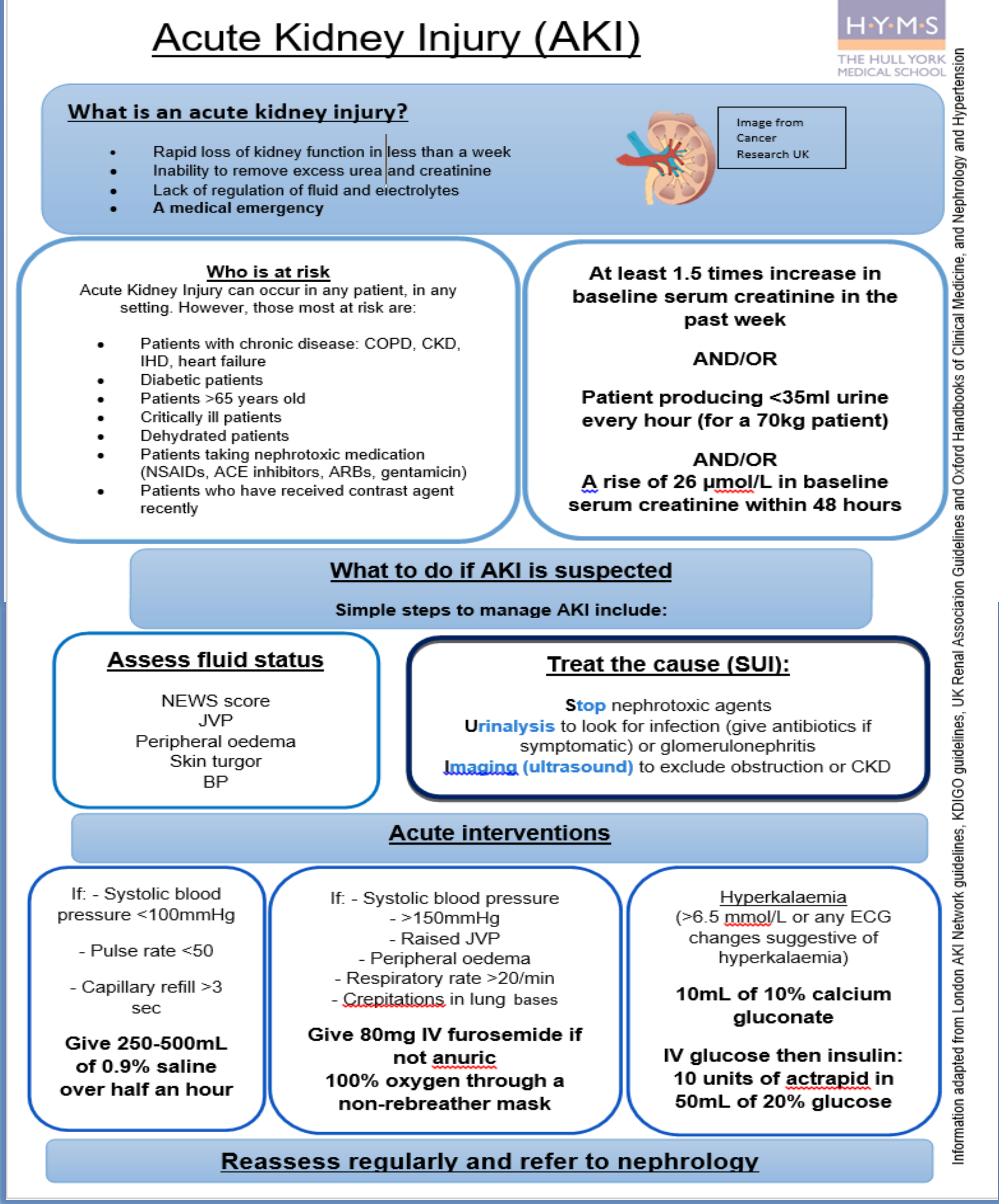
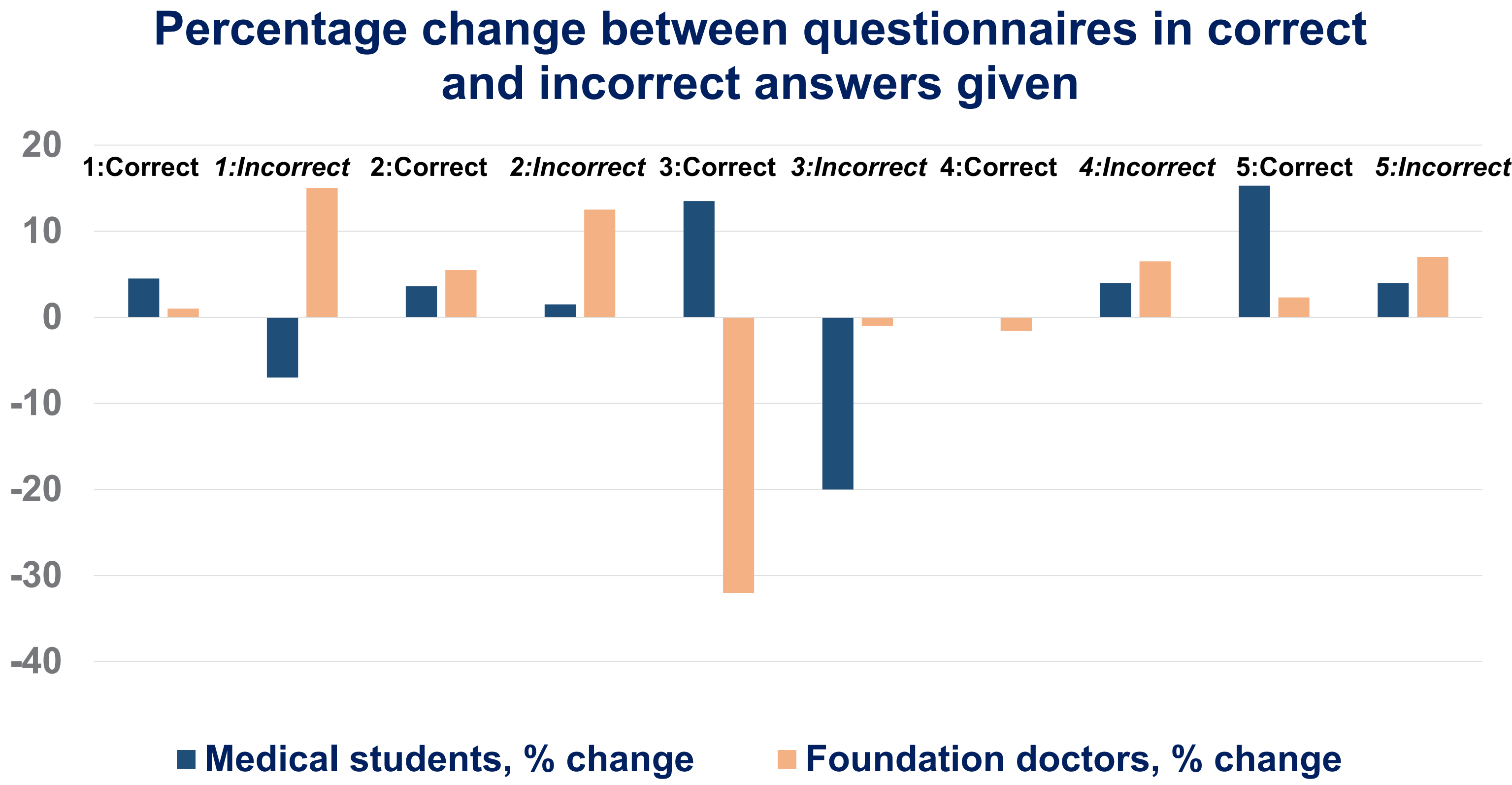
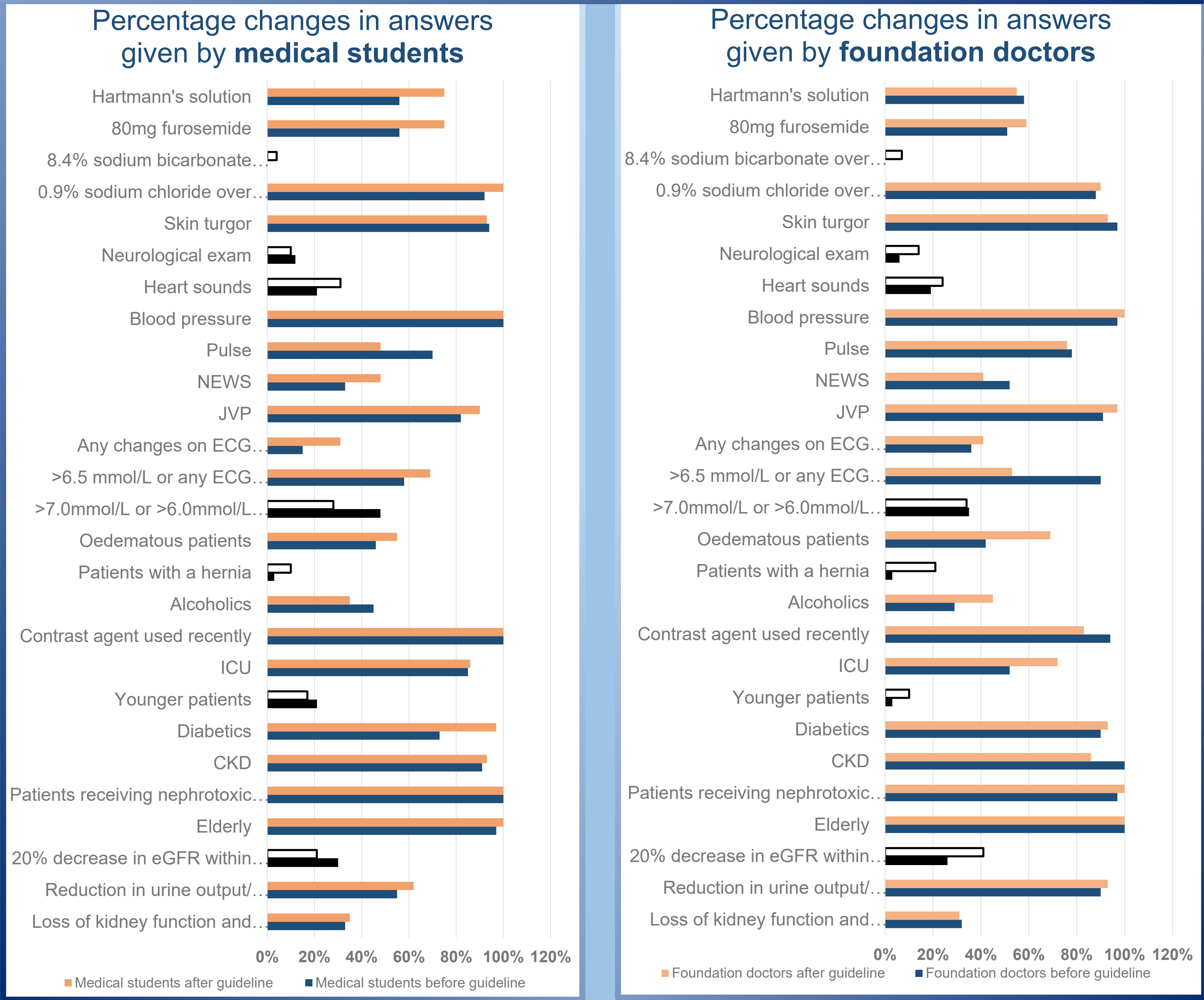


Figure 2

Tables 2 and 3; black and white bars represent incorrect answers



Conclusion

Use of a guideline as an education tool has in part been effective but needs to be combined with other educational techniques to optimise knowledge & understanding. Our study has highlighted continuing issues with AKI awareness in junior doctors & medical students. Further education in AKI is needed at an early stage of training.