Improving knowledge and confidence of general physicians and trainees on the subject of Acute Kidney Injury though novel education tools; Results from 2 UK teaching hospitals .
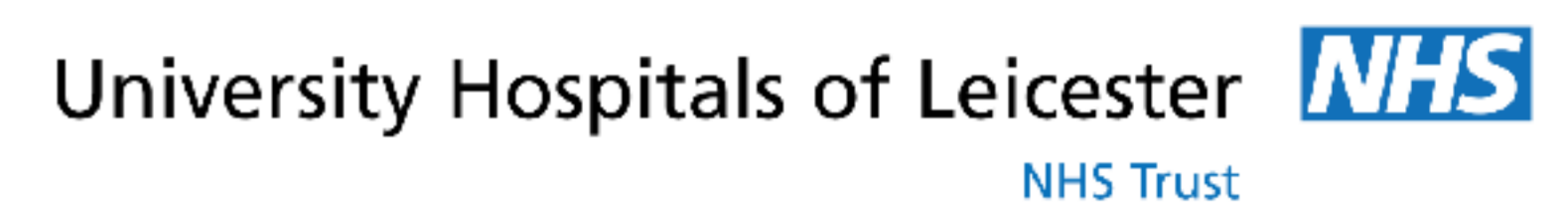
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Introduction:

• Acute Kidney Injury (AKI) causes significant morbidity and mortality. In the United Kingdom (UK) it has been recognized that the management of patients with AKI can be improved significantly. Most of patients with AKI in the UK are currently managed by non-nephrologists, who may lack the knowledge and confidence to treat the condition proficiently.

Aim

• We aimed to improve the confidence and knowledge of general physicians and trainees in two large UK teaching hospitals (University Hospitals of Leicester and Royal Derby Hospital - serving combined population of 2 million) on the topic of AKI through a blended educational approach.

Methods

3 main educational approaches were developed:

• An e-learning package (figure 1)
• Teaching at seminars and teaching sessions
• Face-to-face real-time teaching based on patients in a ward environment

•Doctors working in these hospitals were surveyed at hospitals inductions and educational sessions prior to educational intervention using TurningPoint® software (Turning Technologies™).

•The questionnaire gathered demographic data and asked how confident doctors felt they were at managing patients with AKI. The questionnaire also included 15 MCQs designed to test the knowledge of the doctor on the topic of AKI in relation to patient care in a generalist setting.

•A subsequent survey was run after the educational interventions were implemented, to see if confidence and knowledge (based on 15 further MCQs) had increased.
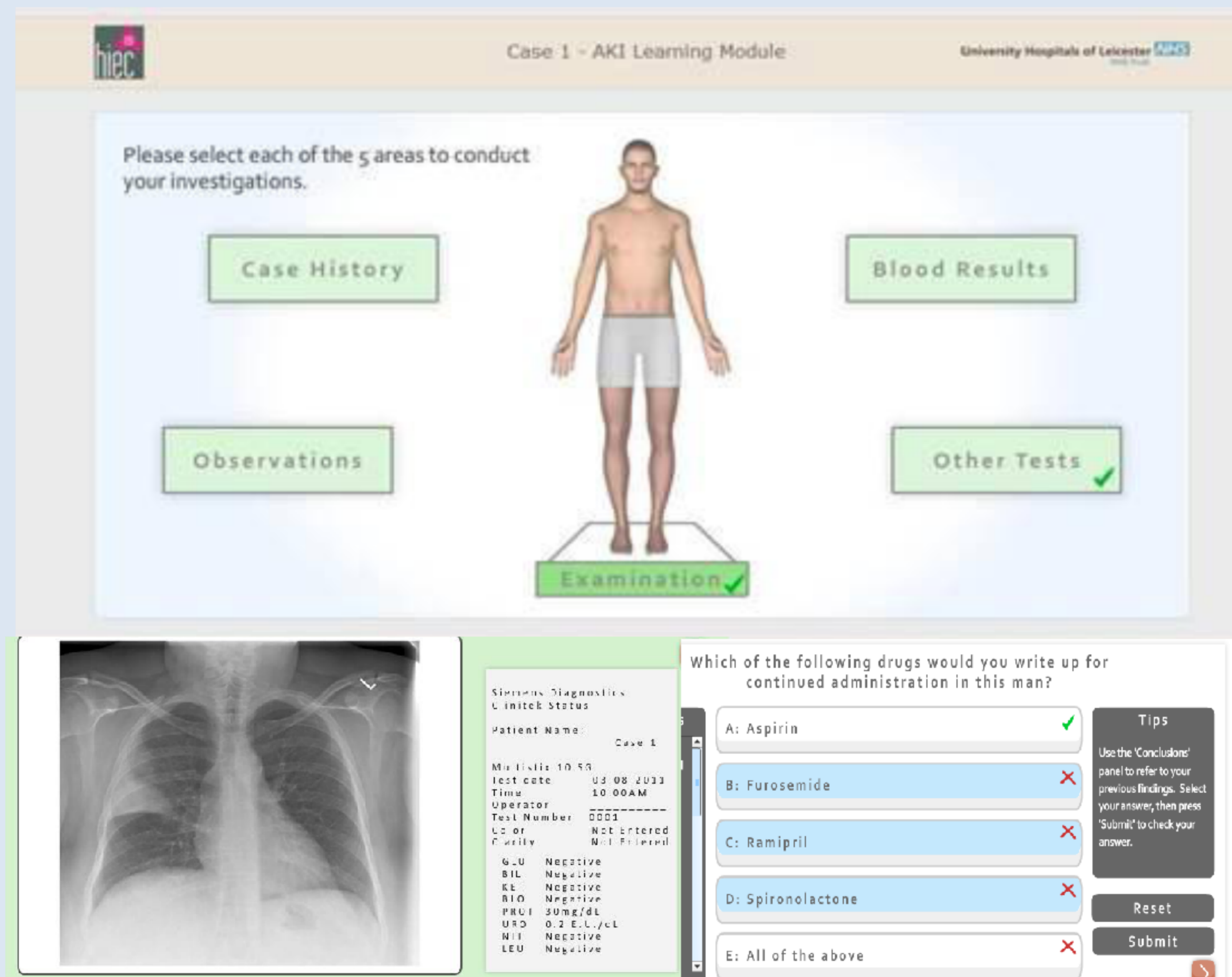

Fig. 1. Electronic learning tool on AKI

Each case is presented in a visually stimulating fashion, and offer the user a chance to explore the details of the case. Additional case information is presented in a real life setting, and the user engagement future increased with the use of interactive quizzes.

Results

Questionnaire survey tool results:

• 457 doctors completed the survey; 319 competing the initial survey and 138 completing the final survey.

• More than 95% of doctors reported they had received some form of prior teaching on AKI before the new education package was delivered.

• Prior to the educational intervention, 50% of doctors thought AKI was almost always identified in patients when present this improved to 68% post intervention. 48% felt an appropriate management plan would almost always be initiated in patients with AKI prior to intervention, this improved to 64% post intervention.

• After the education package was disseminated doctors were more likely to be aware of local guidelines, and reported better clinical practice when diagnosing, and investigating, patients with AKI (p <0.05) (Figure 2).

• Although the difference in knowledge test scores did not reach statistical significance (p=0.06), doctors performed better in the second MCQ test (average score 44% vs 47%).

e-Learning package results:

• 292 individuals accessed the e-Learning package over a period of 4 months; the completion rate of the module was 65%.

• Despite the tool been targeted at clinicians a wide range of health care professionals completed the tool.

• Of those who completed the resource 17% were junior clinicians, 17% were senior clinicians, 40% were nursing staff, and 21% other staff, indicating

• Only 20% of junior doctors who were actively encouraged to use the e-Learning tool actually completed the module. This suggests that although time-consuming, face to face teaching results in greater engagement from junior doctors.
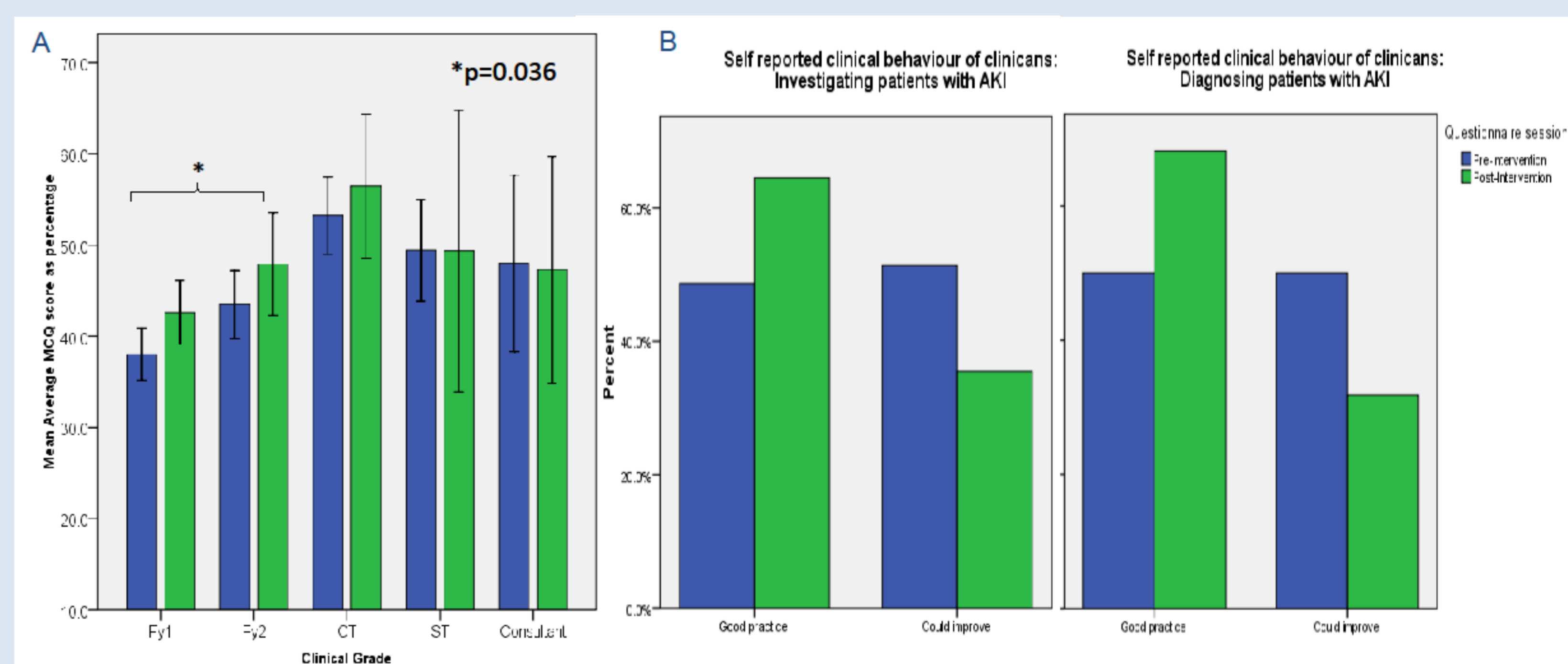

Fig. 2

Clinicians with less than 24 months clinical experience showed significant improvement in mean scores. Comparison of mean scores for 15 questions on AKI, pre and post intervention (A). Comparison of coded questionnaire results pre and post intervention. Clinician behaviour in diagnosing patients with AKI, and investigating patients with AKI (B).

Conclusions

• Confidence and knowledge of AKI in general physicians can be improved using an integrated education package, even if the majority of the target audience has already received education on AKI.

• Overall the scores of 15 MCQs designed to test knowledge was higher post exposure to the educational package, suggesting better education may be a powerful tool in helping to improve the outcomes of patients with AKI

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