Hyperkalemia Management in the Hospital Setting: Success of Online Medical Education at Improving Knowledge, Competence, and Confidence of Cardiologists

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BACKGROUND

Emerging therapies hold promise to improve the treatment of hyperkalemia, especially in patients with concomitant heart failure in the hospital setting, but clinicians are in need of updates on the development of new drugs. We sought to assess baseline knowledge related to emerging treatments for hyperkalemia and determine if online continuing medical education (CME)- and continuing education (CE)-certified activities could improve the clinical knowledge, competence, and confidence of cardiologists and nurses in this area.

METHODS

PRE-ASSESSMENT

POST-ASSESSMENT

Cardiologists n=85

Nurses n=1357

Online, CME- and CE-certified, expert exchange between 2 expert faculty. The activity launched July 27, 2018, and data were collected through August 22, 2018.

Cardiologists n=85

Nurses n=1357

TWO ANALYSES OF THE PRE/POST SAMPLE

AGGREGATED LEARNING

Overall group tracked pre and post-education

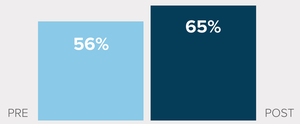
LINKED LEARNING

Each individual tracked pre and post-education

RESULTS

Cardiologists n=85

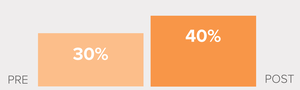
AGGREGATED RESULTS



McNEMAR'S CHI-SQUARE TEST ***P* =.0235**

Nurses n=1357

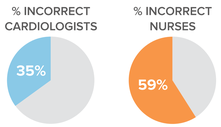
AGGREGATED RESULTS



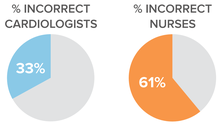
McNEMAR'S CHI-SQUARE TEST ***P* <.0001**

Continued educational gaps:

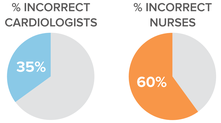
- Manage elevated potassium in a hospital setting



- Identify differences in mechanism of action of emerging treatment options compared with traditional options



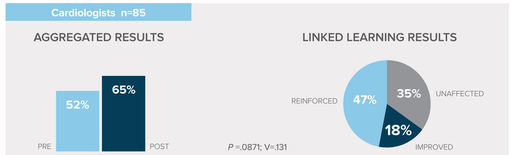
- Recognize role of new therapies in the management of hyperkalemia



QUESTION 1 RESULTS

18% of cardiologists (*P* =.08) and 23% of nurses (*P* <.001) demonstrated improved competence related to management of elevated potassium in the hospital setting

Cardiologists n=85



Nurses n=1357

Question: A 46-year-old male patient hospitalized with end-stage chronic kidney disease (CKD) has a nonhemolyzed serum potassium (K^+) level of 6.9 mEq/L. A previous nonhemolyzed K^+ reading obtained a few hours earlier was 6.1 mEq/L. Dialysis is not available at the hospital. Which of the following options should you consider first in this patient?
Correct answer: Administer calcium gluconate to stabilize arrhythmia risk

QUESTION 2 RESULTS

11% of cardiologists (*P* =.20) and 18% of nurses (*P* <.001) demonstrated improved knowledge related to differences in mechanism of action of emerging treatment options compared with traditional options

Cardiologists n=85

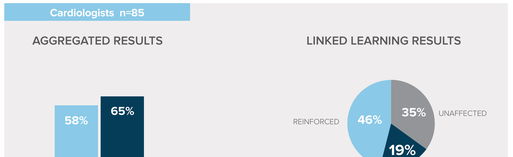
Nurses n=1357

Question: Which of the following is a likely reason for the rapid onset of action of sodium zirconium cyclosilicate (ZS-9) compared with the onset of action of patiromer or sodium polystyrene sulfonate (SPS)?
Correct answer: Anatomic location of potassium binding

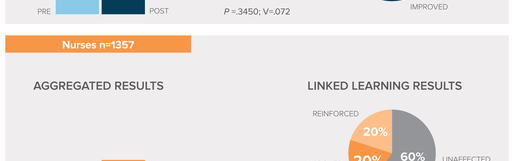
QUESTION 3 RESULTS

19% of cardiologists (*P* =.34) and 20% of nurses (*P* <.001) demonstrated improved knowledge related to the role of new therapies in the management of hyperkalemia

Cardiologists n=85



Nurses n=1357

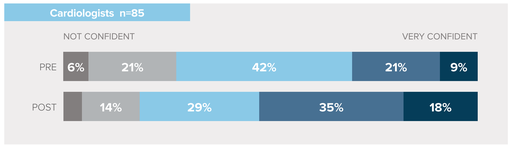


Question: Which of the following best describes the role of patiromer and ZS-9 in managing hyperkalemia?
Correct answer: They eliminate K^+ from the body

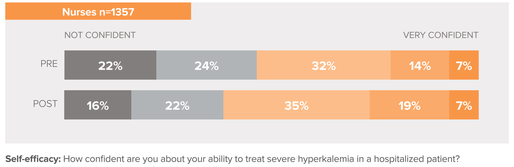
SELF EFFICACY RESULTS

40% of cardiologists and 25% of nurses reported increased confidence in their ability to treat severe hyperkalemia in a hospitalized patient after participating in the CME/CE activity

Cardiologists n=85



Nurses n=1357



Self-efficacy: How confident are you about your ability to treat severe hyperkalemia in a hospitalized patient?
(Select ranking from 1 [Not confident] to 5 [Very confident])

CONCLUSION

- **This study demonstrates the success of online, video-based education in improving knowledge, competence, and confidence of cardiologists and nurses related to emerging treatments for hyperkalemia and their potential use in the hospital setting.**
- **Continued knowledge gaps were identified for future educational initiatives.**

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