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Hyperammonemia after Lung Transplantation: Best Practice Recommendation

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Introduction

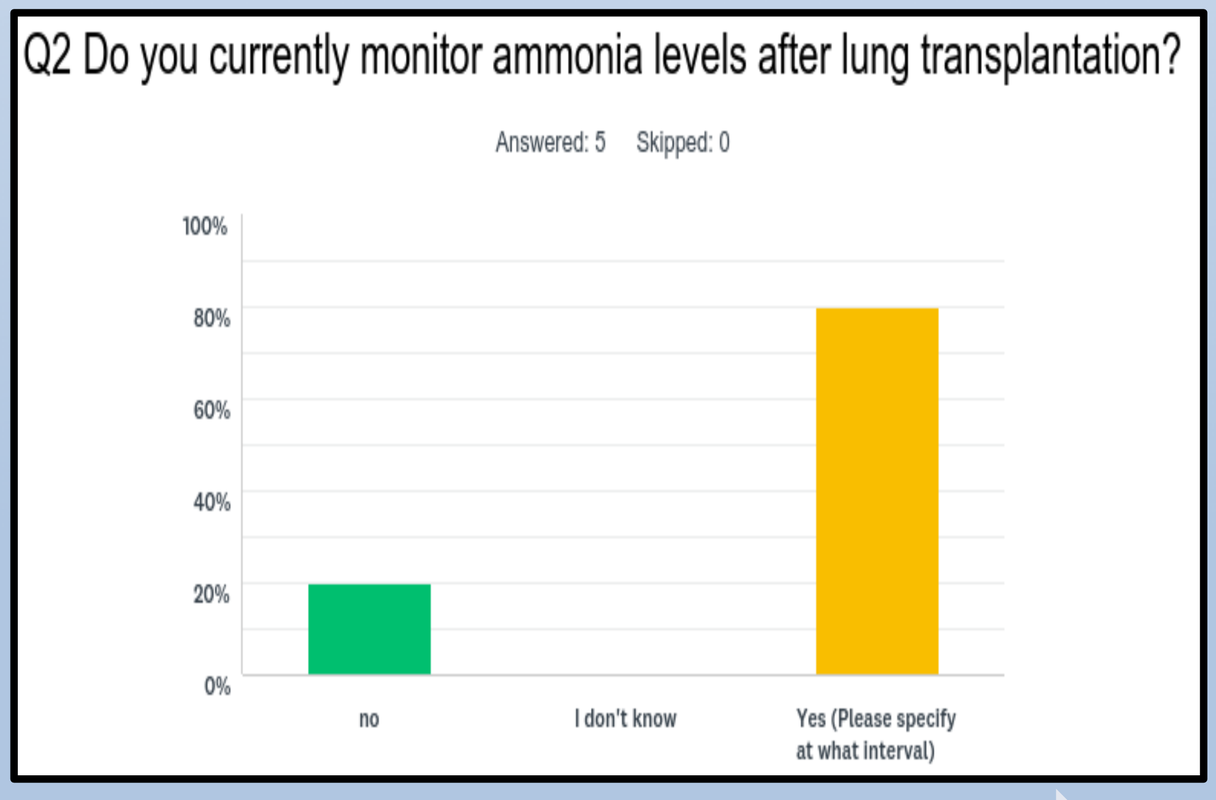
Hyperammonemia is a rare, often fatal, complication after lung transplantation. The purpose of this study was to determine any practice protocols among lung transplant practitioners regarding the monitoring of ammonia levels after lung transplantation. Hyperammonemia is characterized by increased serum ammonia levels (200 mcg/dL), as well as encephalopathy, cerebral edema, seizures, and coma. Current literature does not have an established standardized hyperammonemia protocol. This study will investigate clinical experience of diagnosing and treating hyperammonemia in the post-transplant lung setting to try to prevent, identify, and treat future cases of hyperammonemia.

Significance

All five centers were in agreement that hyperammonemia after lung transplantation is of significant concern. Four out of five centers test ammonia levels after transplantation and all five centers had a protocol in place. Yet, all five centers had completely different protocols. Thus, a universal protocol must be developed and utilized to test the effectiveness of the protocol.

Methods

- Purposive Sampling
- Required Parameters: Nurse Practitioners who work at centers the same size as Vanderbilt Lung Transplant Center, and considered to have expert knowledge and experience
- Sample Size: 12 participants
- Results: 5 responses (42% response rate)
- 4 multiple choice survey questions



Broad Spectrum Antibiotic (Rifaximin)

Bowel Decontamination (Lactulose)

Nitrogen Scavengers (Arginine)

Dialysis (IHD or CVVHD)

Patient Questionnaire

1. What is your program's level of concern for hyperammonemia after lung transplantation?
2. Do you currently monitor ammonia levels after lung transplantation? If yes, at what interval?
3. How many patients with hyperammonemia have been detected after lung transplantation in your program?
4. Do you have a treatment protocol for hyperammonemia after lung transplant?

Impact/Conclusion

Based on the data collected, hyperammonemia is of heightened concern after lung transplantation. With 4 out of the 5 centers monitoring ammonia levels after lung transplantation, and at least one patient diagnosed with hyperammonemia, it's important to not only test ammonia levels post transplantation, but also to have a protocol in place. The protocols already in place varied with each response. Further research needs to be done to evaluate the patient outcomes of the different protocols. Once that research has occurred, one universal protocol needs to be established.

References

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