Staff Awareness of Wernicke Encephalopathy

A Retrospective Descriptive Study

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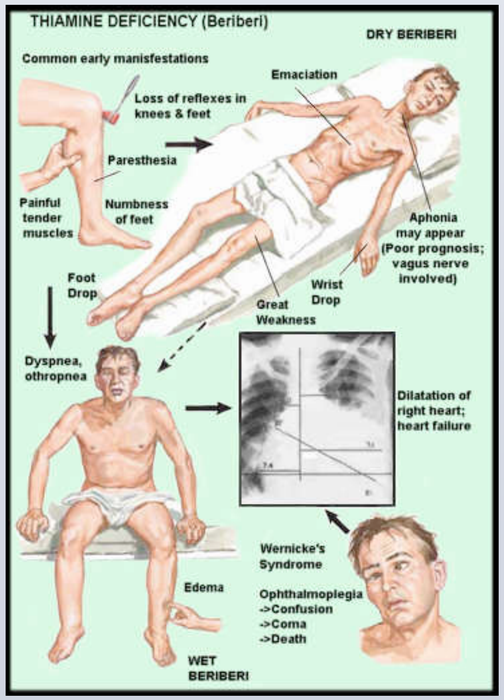
BACKGROUND SIGNIFICANCE

Wernicke's encephalopathy is a neuropsychiatric syndrome, which is due to deficiency of thiamine. It can often be undiagnosed and untreated in the acute care setting as it can present as other conditions. frequently associated with alcohol misuse, and has a high morbidity and mortality. In 80% of cases, the diagnosis is not made clinically prior to autopsy and inadequate treatment can leave the patient with permanent brain damage: the Korsakoff's syndrome (Thomson, Guerrini, Marshall, 2009). Wernicke's can be seen in clients who are dietary deficient, HIV/AIDS, post-bariatric surgery, hyperemesis gravidarum, pancreatitis, cancer, and thyrotoxicosis.

RESEARCH QUESTIONS

"Does the implementation of a thiamine protocol in the early treatments of Wernicke's encephalopathy decrease the incident of a neuropsychiatric syndrome in the acute care facility?"

"Can alcohol assessment screening tools be modified to more accurately identify patients with Thiamine deficiency to reduce Wernicke Encephalopathy?"



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METHODOLOGY

Two integrative research review (IRR) of the literature was conducted using the methodology described by Whittlemore & Knafl (2005) and Brown (2018).

Databases Searched

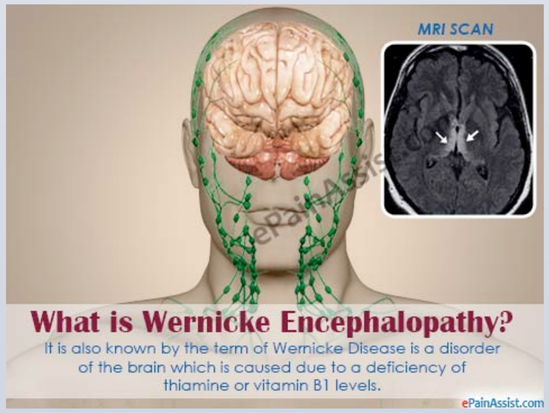
CINAHL, Medline Complete, Cochrane, Health Source Nursing & PubMed

Search Keywords

"Wernicke's Encephalopathy" AND "Thiamine"
"Wernicke" AND "Withdrawal" AND "ALCOHOL"

Search Criteria

- All databases listed above were searched with the keywords.
- IRR One: Inclusions criteria included studies involving the treatment with high doses of Thiamine in suspected of Wernicke's Encephalopathy. Evaluation showed improvement with the treatment. Exclusion criteria were literature containing treatment with thiamine without diagnosis of Wernicke's encephalopathy. Articles discussing Wernicke's encephalopathy without treatment with thiamine. Articles older than 2010 were excluded.
- IRR Two: Inclusion criteria included studies involving the evaluation of alcohol assessment tools, guidelines, and recommended treatment for alcohol withdrawals. Exclusion criteria included studies with lack of sufficient information/evidence, summarizations in which original study was found.



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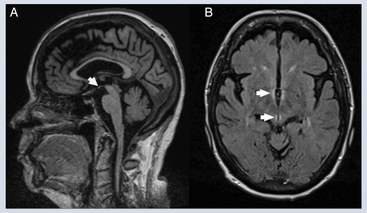
LITERATURE SYNTHESIS

- In a Cochrane Database of systemic review, Thiamine for prevention and treatment of Wernicke Encephalopathy based on clients with a history of alcohol abuse. In the case study it was determined that alcohol abusers appear to significantly increase the amount of thiamine required to treat the clients. In this study 5-group randomized clinical trail with all clients were blind to treatment dose. Each group had different intramuscular thiamine injections. Dosages range from 5 mg, 20 mg, 50 mg, 100 mg, and 200 mg once per day. Patient conditions improved and neurological symptoms improved quicker with with the larger doses of thiamine than the lower dosages.
- Isenberg-Grzeda (2015).A case study review was performed with clients diagnosed with three different types of cancer. Each client was given 500 mg of thiamine IV T.I.D. with a rapid reversal of alter mental status.
- It is essential to consider the diagnosis of Wernicke Encephalopathy in any confused dependent patient attending the acute hospital (Stewart and Swain, 2012).
- Doctors in acute hospitals are often inexperienced in managing dependence. For this reason, assessments of dependence and treatment are often suboptimal (Stewart and Swain, 2012).
- Guidelines exist for the management of alcohol withdrawal syndrome (AWS) but few have been assessed as to their suitability for general hospitals (A. McPherson et al, 2012).



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PURPOSE OF STUDY

- Review charts and identify participants with signs and symptoms of Wernicke based on the history of alcohol use.
- Ensure Covenant Health has an increasing awareness of a serious misdiagnosed disease, that can be easily treatable.
- Collaborate with other healthcare teams to ensure proper treatment.
- Discuss screening tools/assessments to screen high risk population.

Design & Procedure

- Institutional Review Board from LCU and Covenant approved the study.
- Participants were de-identified. Age, gender, ethnicity, alcohol and types of alcohol used, frequency, amount of alcohol, order of thiamine, dosage of thiamine, frequency of thiamine, days in the ICU, days in the hospital, Wernicke symptoms, and diagnosis of Wernicke's were assessed.
- 1515 charts received from Covenant Medical Center from January 2017 to May 2018 with diagnosis of encephalopathy. ICD codes of G92 were assessed. 35 Participants met criteria for the study.
- 24 males, 11 females with a minimum age of 19 and maximum age of 73.
- 29 participants acknowledge alcohol use. 13 acknowledge the use of beer, 12 used liquor, 5 used beer and liquor.
- 13 participants had orders for thiamine.
- 18 were placed under CIWA protocol, 1 Sepsis, 13 only utilized the Delirium CAM-ICU, 1 CIWA & Sepsis, and 2 had no protocols in place.
- Days in the hospital ranged from 1 day to 28 days.
- Days in the ICU ranged from 1 day to 16 days.
- Wernicke Symptoms: No symptoms (3), Ataxia (4), Delirium (10), Nystagmus (1), Ataxia & Delirium (12), Delirium & Nystagmus (2), Ataxia, Delirium, and Nystagmus (3)
- Diagnosis of Wernicke Encephalopathy: 0, with 3 participants showing all three signs and symptoms of ataxia, delirium, and nystagmus.

CONCLUSION

- Multiple regression was used to explore the relationship between the number of hospital days, WE symptoms and thiamine dosage.
- Collinearity diagnostics (VIF 1.0 for WE and Thiamine Dosage)
- The linear mixed-effects model found that thiamine dosage and WE symptoms (ataxia, delirium, and nystagmus) explained a significant amount of the variance in hospital days ($F(2, 32) = 3.57$, $p = .040$, $R^2 = .182$, $_{Adjusted} = 1.31$

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REFERENCES

Available upon request.

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