BROWN EMERGENCY MEDICINE DIZZINESS DIAGNOSTIC PATHWAY

PURPOSE: To provide an accelerated diagnostic pathway for the evaluation and treatment of patients presenting to the ED with dizziness that is not easily categorized into central or peripheral in origin after ED workup

INCLUSION CRITERIA: Any adult patient presenting to the ED with a complaint of dizziness that does not have a central etiology discovered on CTA Brain/neck however concern still exists for central etiology OR patient remains too symptomatic for discharge after treatment with meclizine for peripheral vertigo. Patients should be without evidence of other ongoing serious medical diagnosis and should not have other neuro deficits at time of admission to CDU

- Patient may still have some dizziness at time of admission (but should not be constant when still which would suggest a central etiology)
- Neuro consult in ED or CDU not required if the patient's only symptom is dizziness
- Neuro can be consulted from the CDU if additional symptoms come to light or if imaging suggests stroke/central cause of dizziness
- This pathway should not be applied to all dizziness patients. Patients with peripheral vertigo that has responded to medication in the ED should be discharged to home

EXCLUSION CRITERIA:

- Age <18 years old
- Pregnancy
- New measurable neurologic deficit (with the exception of dizziness)
- Co-morbid active medical illness warranting hospital admission
- Clear evidence of alternative explanation of symptoms (e.g. metabolic or infectious)
- New onset atrial fibrillation
- New and clinically relevant ECG, CT, or lab abnormalities mandating additional medical intervention
- Persistently abnormal vital signs
    - Temperature >100.4F
    - HR >100 bpm or symptomatic bradycardia (HR<60)
    - Hypotension (SBP<100mmHg) or severe hypertension (SBP>180mmHg)
    - Hypoxia, Baseline O2 saturation <92% (whether on RA or chronic oxygen therapy)
- Failed nursing swallow assessment
- Alcohol or substance intoxication, risk for alcohol or substance withdrawal, psychosis or suicidal ideation
- Inability to ambulate or lay recumbent for 30min
- Other findings highly suggestive of posterior circulation stroke such as: patients with direction changing nystagmus, obvious ataxia / dysmetria or skew deviation

INITIAL ED WORK UP: Standard work-up prior to entry into the CDU includes a full ED provider evaluation as well as:

- CTA brain and neck prior to CDU admission (if not contraindicated)
- 12-lead ECG • Nursing swallow assessment
- Labs (POCT blood glucose, BMP, CBC, PT/INR, aPTT, troponin, UA)

ADDITIONAL DIAGNOSTIC WORK-UP PERFORMED IN THE CDU MAY INCLUDE:

- Physical Therapy Evaluation and Treatment consult for dizziness
- MRI brain without gadolinium
- Vessel imaging (if CTA not already done):
    - CTA brain and neck (preferred method)

- MRI/MRA brain and neck with gadolinium (if contraindication to CTA, do not order MRI without gadolinium separately)
- Continuous telemetry while in the CDU
- Additional labs (hepatic function panel, Hb A1C, fasting lipid profile, Utox)
- Potential Testing at the Discretion of the EM Team:
  - 2D transthoracic echocardiogram (TTE)
  - Carotid duplex ultrasound
  - Pre-discharge referral for a 30-day cardiac event monitor

OPERATIONS OF THE CDU DIZZINESS PATHWAY:

Nursing Documentation:

Smoking, physical activity, and dietary habits
Swallow screen, if not done already
Q4h neuro checks including mNIHSS

Standardized Medication Interventions:

- Meclizine 12.5 or 25 mg PO q 8 hrs depending on age, weight and patient tolerance
- Anticoagulation: Consider aspirin 325 mg PO daily for patients without cerebral hemorrhage who are not otherwise anticoagulated.
- Anti-hypertensive Therapy: Patients with three blood pressures >140mmHg separated by at least 30 minutes each should be considered for anti-hypertensive therapy. Preferred agents are calcium channel blockers, diuretic, ACE-inhibitors, ARBs.

CRITERIA FOR HOSPITAL ADMISSION FROM THE DIZZINESS PATHWAY:

- MRI documenting cerebellar stroke → requires Neuro consult for possible admission to neurology.
- Recurrent/Uncontrollable dizziness despite meds.
- Patient unable to tolerate PO secondary to dizziness induced vomiting
- Patients who are unable to ambulate secondary to dizziness should be considered for Admit or Placement in SNF
- Evidence of structural cardio-embolic source warranting additional intervention (if TTE obtained), such as endocarditis or intracardiac thrombus.
- Clinical deterioration or EM attending concern that the patient is unsafe for discharge.

DISCHARGE PROCEDURE FROM THE OBSERVATION UNIT: Upon completion of the diagnostic evaluation, patients not meeting the above admission criteria may be discharged home. The following appointments should be made prior to discharge:

- Prescription for an appropriate dose of meclizine
- Appropriate work, driving and recreation restrictions
- Referral to vestibular PT if indicated
- Referral to PCP for follow up. If the patient does not have a PCP, then referral will be based on the following:
  - If insured, contact The Brown health referral network for an appointment within 90 days.
  - If uninsured, refer to the Chapman St. clinic (RIH), Fain medical clinic (TMH), or Newport LPG (401-606-4PCP).
- If patients are not improved enough for discharge in 48 hrs they should be admitted or placed in a skilled facility

PROVIDER ROLES IN THE CDU DIZZINESS PATHWAY

EM Attending Duties and Coverage:

The EM attending covering the CDU will be responsible for clinical oversight, operation and patient flow through this unit. The attending covering the CDU patients will round with the APP each morning at the site scheduled time. A progress note will be completed upon rounding. Upon discharge, the APP will

notify the ED attending covering the unit that the patient is ready for discharge; the ED attending and/or APP will see the patient and briefly review the discharge plan and answer any questions the patient may have. On the discharge portion of a templated progress note, the ED attending will document that the “Discharge plan was reviewed,” and sign with note. The covering EM attending will review patient imaging, labs, and consult recommendations. Nursing will notify the attending of ECGs to review.

APP Duties and Coverage:
The EM APP in the CDU will implement the observation protocols. They will perform the daily progress notes and discharges from the unit. They will complete the ORM forms for all patients.

Nursing Duties and Coverage:

Nursing will implement the observation protocols and attend to the daily needs of the patients in the CDU. They will notify the covering EM attending and APP of changes in the patient’s condition and will notify the covering provider of clinical data to review. Nursing will prepare patients for additional procedures in accordance with hospital protocols. The nurse will arrange transport for all testing required by CDU patients. Upon discharge, the nurse will go over standardized education paperwork with patients.

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