

TRANSCUTANEOUS (EXTERNAL) CARDIAC PACEMAKER – ICU/ED

- PURPOSE:** To outline the management of the patient with a transcutaneous pacemaker.
- SUPPORTIVE DATA:** Transcutaneous pacing (TCP) is a temporary pacing method used to induce cardiac contractions (capture) by passing a brief electrical current through the thorax. This method is rapid, non-invasive, and is used until a transvenous or permanent pacemaker can be inserted. It may be used to treat symptomatic bradycardia, second, and third-degree heart blocks.
- Hypoxia, acidosis, hypothermia, electrolyte imbalances (hypo/hyperkalemia), and drug toxicities (e.g., digoxin) may cause myocardial resistance to pacing.
- ASSESSMENT:**
1. Monitor the electrocardiogram (ECG) continuously.
 2. Assess the following before initiating and a minimum of every 1 hours
 - Vital signs (VS)
 - ECG rhythm and pacemaker capture (verify capture by checking femoral or peripheral pulses)
 - Hemodynamic values if applicable
 - Respiratory insufficiency (diaphragmatic function can be impaired)
 3. Verify the following settings within 1 hour of assuming care of the patient:
 - Pacing rate
 - Milliamps (mA)/output
 - 100% capture with palpable pulse
 4. Mode of pacing (asynchronous or demand, if applicable). Assess the following every 4 hours:
 - Signs of decreased cardiac output: dizziness, altered level of consciousness
 - Adherence of pacer pads to skin
 - Skin integrity around pacemaker pads
 - Patient discomfort and need for muscle relaxants/pain medication/sedative
 - Cool, clammy, diaphoretic skin
 - Development of chest pain
 - Hiccups
 - Anxiety
 5. Assess skin integrity under pacemaker pads with every pad change.
- PAD CHANGE:**
6. Turn pacemaker “off” or to “monitor only” setting prior to replacing pads.
 7. Change pacemaker pads a minimum of every 8 hours. (For Pediatrics change every hour) Write date and initials on pad upon application
- TROUBLESHOOTING**
8. Perform the following interventions and notify the provider immediately if problem persists:
 - Non-capture/non-pacing:
 - Check pad placement
 - Check cable connections and ensure pacemaker is plugged in
 - Increase mA as needed
 - *Recommendation is for a 10% increase above threshold. After obtaining 100% capture, increase approximately 5-10 mA
 - Example: Capture at 70mA increase to 75mA or 80mA
 9. Instruct on the following:
 - Purpose and sensations associated with pacemaker
 - Precautions to prevent pacemaker pad dislodgment/disconnection
 - Need to report any of the following: dizziness, syncope, sudden increase in respiratory difficulty, discomfort/pain, hiccups
 - Anxiety relief
- PATIENT/
CAREGIVER
EDUCATION**

REPORTABLE
CONDITIONS:

10. Notify provider immediately for:
- Significant changes in VS, hemodynamic values, ECG rhythm
 - Failure to capture/ pace
 - Respiratory insufficiency
 - Dizziness, syncope
 - Hiccups
 - Inability to relieve discomfort

ADDITIONAL
STANDARDS:

11. Implement the following as indicated:
- Pain Management
 - Sedation/Analgesia (Intravenous) – ICU
 - IV Therapy

DOCUMENTATION

12. Document in accordance with documentation standards:
- In iView on Systems Assessment Navigator band – Pacer (Dynamic Group)

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References
AACN (2017)