Patients with Tracheostomy and Ventilator Dependence: Importance of Communication

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Overview

• Impact of tracheostomy and ventilator dependence on communication, safety, patient rights, mental status, and quality of life

• Methods of communication
  – Focus on verbal communication
ASHA’s vision

Making effective communication a human right, accessible and achievable for all

Are we doing this for our patients with tracheostomy and ventilator dependence?
What are our obstacles?

• Time
• Resistance from RN
• Resistance from MD
• Resistance from RT
• Insufficient knowledge
• Our patients are too sick
• We just wait until they are off the vent
IMPACT OF TRACHEOSTOMY AND VENTILATOR DEPENDENCE
Impaired communication
Patient safety

• Poor communication can result in
  – Serious medical events (Cohen et al., 2005)
  – Sentinel events (The Joint Commission, 2007)

• “Patients with communication problems were three times more likely to experience preventable adverse events than patients without such problems” (Bartlett et al, 2008)
Patient rights

• The Joint Commission:
  – “The organization addresses the needs of those with vision, speech, hearing, language, and cognitive impairments” (Elements of Performance R1.2.100, No 4)
  – “The organization respects the patient’s right and need for communication” (Standard of Care R1.2.100)
  – New accreditation standards include the communication disability acquired as a result of tracheostomy as a condition requiring provider assessment and accommodation
Patient rights

• ADA
  – “The ADA applies to all hospital programs and services...”
    • It applies to your facility
  – “Wherever patients ... are interacting with hospital staff, the hospital is obligated to provide effective communication.”
  – “Effective communication is particularly critical in health care settings where miscommunication may lead to misdiagnosis and improper or delayed medical treatment.”

Patient rights (VUMC document)

• Know what your problem is and what this might mean for you
• Share in decisions about your care
• Be told what you can expect from your treatment, its risks and benefits, other choices you may have, and what might happen if you are not treated at all
• Meet with an ethicist, chaplain, or advocate to talk about ethical issues and policies
• Refuse tests or treatment (as far as the law allows) and to be told what might happen if you do
Mental status

• 60 – 85% of critically ill mechanically ventilated patients experience delirium (www.icudelirum.org)

• Why?
  – Hypoxia
  – Medications
  – Poor sleep
  – Unfamiliar environment
  – Severe pain
  – Medical illness
  – Lack of communication?
Complications of delirium

• Delirium is associated with worse outcomes
  – Increased length of stay and ventilator-days
  – Cognitive dysfunction
  – Increased hospital costs
  – Mortality
Patient testimonial

“I actually seen body bags with my children's names on them. I tried to help them and tried to communicate this but with the tracheostomy tube I was unable to do this. My wife told me later that I tried to pull my tracheostomy out one night and I believe that this is the same night that I recall the body bags. The next day I was strapped down to my bed for safety reasons and I had the same dream the next night and I was dreaming that I got caught trying to help my kids and was tied to a bed so I couldn't help them.” (www.icudelirium.org)
Post-Intensive Care Syndrome (PICS)

- New or worsening impairments in physical, cognitive, or mental health status arising after critical illness and persisting beyond acute care hospitalization.
Growing interest in ICU Survivors
Efforts to reduce delirium and PICS

• ABCDEF Bundle
  – A – Assess, Prevent and Manage Pain
  – B – Both SATs (spontaneous awaking trials) and SBTs (spontaneous breathing trials)
  – C – Choice of Sedation
  – D – Delirium: Assess, Prevent and Manage
  – E – Early Mobility and Exercise
  – F – Family Engagement and Empowerment
Communication as part of the bundle of care?

• Communication-vulnerable patients have an increased diagnosis of psychopathology (JCAHO webinar, Call to Action: Improving Care to Communication Vulnerable Patients)

• Maybe the inverse is true
  – Patients with access to effective communication have a reduced diagnosis of psychopathology?
    • Enabling communication can improve well-being, increase compliance and reduce length of stay (Batty, 2009)
Quality of life

• The inability to speak has been identified as “…the main instigator for feelings of insecurity, anxiety/fear, and even agony/panic” in mechanically ventilated individuals (Bergbom-Engberg & Haljamäe, 1989)

• Inability to communicate in the ICU patient can lead to frustration, anger, withdrawal from interaction with family and staff, and reduced participation in treatment (Magnus, V. & Turkington, L. 2006)

• Return of voice was associated with significant improvement in patient reported self-esteem, particularly in being understood by others (Freeman-Sanderson, 2016)
What is the common theme?

...AND THAT IS WHY WE LIFT ON THREE...

COMMUNICATION
Establishing communication should be a standard of care for this patient population.
PREACHING TO THE CHOIR
YOU ARE
HOW CAN WE IMPROVE COMMUNICATION?
Non-verbal communication options

- Writing
- AAC
- Communication board ([www.vidatak.com](http://www.vidatak.com))
- Phone or tablet (Trachtools app, text to speech apps)
- Gestures
- Mouthing
Problems with non-verbal options

- Unnatural
- Often difficult due to extremity weakness
- Limited choices
- Imprecise
- Some can be costly
- Time-consuming
- We are poor lip readers
What is the word recognition accuracy of the average person who is lip reading?
• Average person lip reading:
  – “word-recognition accuracy scores were barely greater than 10%”

Alteri et al. (2011)
Goal should be verbal communication
Speaking during mechanical ventilation is not new

- Cuff deflation to facilitate communication in ventilator-dependent patients was reported in the 1960s polio epidemic
In the early 1960s, Dr. RML Whitlock described a simple tracheostomy tube attachment to facilitate communication for patients with cuff inflated.

“The speaking-aid not only makes communication easier but also relieves the patient from the frustration and fear of not being able to make his requirements known.”
The Passy Muir Speaking Valve was developed in 1985 to be used in-line with the ventilator.

Inventor David Muir
Verbal communication options for patients with tracheostomy and ventilator dependence

- Leak speech
- In-line Passy Muir Speaking Valve
- Talking tracheostomy tube
Leak speech

• What is it?
  – Leaking air around the tracheostomy tube into the upper airway for the purpose of phonation

• How?
  – Slowly deflate cuff
    • May not need to fully deflate the cuff
  – Listen for upper airway sounds / phonation
  – Watch for drop in expiratory volumes
Leak speech

• Ventilator adjustments by respiratory therapist (FI02, tidal volume, alarms)
• Encourage vocalization
• Troubleshooting
  – Consider size of trach tube
  – May need downsize
  – Partial vs. full cuff deflation
• Monitor vital signs throughout trial
• Establish plan of care for continued or intermittent leak speech
Pros / cons of leak speech

Pros
• Verbal
• May be able to have a continual leak for longer periods of voicing

Cons
• Expiratory alarms may sound
• Short length of utterance (run out of air)
• Weak, breathy voice
PASSY MUIR VALVE
Passy-Muir Valve in-line with vent

• Patient criteria
  – Medically stable
  – Able to tolerate complete cuff deflation

• Vent criteria (guidelines only)
  – FI02 <50%
  – PEEP < 10
  – Pressure Support <12
  – PIP < 35
Passy-Muir valve in-line with vent

• How?
  – SLP / RT teamwork
  – Obtain baseline measurements
  – Educate
Passy Muir in-line with vent

- Slow cuff deflation

- Listen for exhalation or phonation during cuff deflation
- Look at expiratory volumes to determine air leak
Passy-Muir valve in-line with vent

- Proceed with in-line valve placement
- Need appropriate adapters
Vent adjustments to consider

• Adjust alarms
• PEEP (turn off or decrease by 5)
• Humidification
• Volume compensation during cuff deflation determined by PIP
• **Peak Inspiratory Pressure** – highest level of pressure applied to the lungs during inhalation.
Troubleshooting

• Decreased O2 with cuff deflation
  – May need to increase FI02 (role of the RT)

• Anxiety
  – Provide reassurance
  – Go slow

• Inadequate exhalation/phonation
  – Check cuff
  – Trach tube size (may need downsize)
  – Suctioning needs
  – Need for MD assessment

• Difficulty coordinating vent cycle with phonation
  – Teach to speak on expiration
Pros / cons with in-line PMV

Pros
• Louder voice and longer length of utterance than leak speech
• Restoration of positive airway pressure
• Additional benefits
  – Secretion management
  – Cough function
  – Swallowing
  – Improved lung recruitment

Cons
• May have short duration of PMV use in the ICU
  – Some facilities do not allow in-line PMV without direct supervision
• Alarm issues
  – NIV mode may help
Improved lung recruitment with PMV

• Sutt et al (2016)
  – After introduction of a Passy-Muir protocol for vent dependent patients
    • Patients were speaking an average of 9 days earlier
      – “When a patient is awake and not talking, there is something wrong.” quote from ICU Intensivist
    • Increased lung recruitment was demonstrated during use of the Passy-Muir Valve
    • Patients weaned from ventilator sooner
TALKING TRACHEOSTOMY TUBE
Talking Trach

- Cuffed trach tube with an additional tubing that connects to an air source. Air travels through this tube and flows out of an opening above level of cuff to facilitate voicing.
Talking Trach Tubes

Portex Trach Talk

Portex Suctionaid Trach

Bivona Talking Trachs
Dual benefit tracheostomy tube

Blue Line Ultra Suctionaid (BLUSA) Tracheostomy Tube
Subglottic suction feature

• VAP is a serious complication for patients who require mechanical ventilation
  – Prevalence of VAP in ICU is as high as 64%
  – Cost of a single episode of VAP - $57,000
• Ledgerwood et al. (2013) reported significantly reduced rates of VAP in ICU patients with above the cuff suction tracheostomy tubes
Above cuff vocalization feature

• How to use it
  – Connect external tube to air source
  – Connect humidification
  – Turn on air source
    • Flow meter should be set initially at 3-5 LPM
    • Gas flow may be slowly increased to 10 LPM to produce the desired intensity of vocal quality.
Must occlude the port for phonation
Talking trach

**Pros**
- Verbal option
- Dual feature of voice and suction
- Can use with Passy-Muir Valve
- Patients / families can use the above the cuff vocalization feature independently

**Cons**
- Unnatural voice
- Airflow through stoma
- Patient comfort
- Single cannula trach
- Secretions can clog airflow openings
Blom Trach System

www.pulmodyne.com

Electrolarynx

• Rose et al. (2018)
  – Reduced anxiety
  – Improved ease of communication
Effective communication can result in:

- Adherence to Joint Commission and ADA standards
- Improved safety
- Improved well-being and compliance
- Participation in decision-making
- Interaction with medical staff, family and friends
- Perhaps reduced delirium
- Improved quality of life
Overcoming our obstacles

• Time
  – We need to make time
  – Why have we considered the inability to communicate in the trach/vent patient less important than in the stroke patient or the TBI patient?

• Resistance from RN
• Resistance from MD
  EDUCATION!
• Resistance from RT
• Insufficient knowledge
  – Learn, read, ask questions, go to courses
    (www.passymuir.com)
Overcoming our obstacles

• Our patients are too sick
  – Some are; many are not
  – How will you know unless you evaluate him / her?

• We just wait until they are off the vent
  – Nooooooo
  – Our patients are missing days, weeks, possibly a lifetime if we wait
Key points

• Impaired communication in the trach / vent patient is common
• Safety, patient rights, mental well-being, and quality of life can be in jeopardy due to insufficient communication
• Early referral to speech pathology is crucial to facilitate the most effective means of communication
• Our job – advocate and educate, get the consults and make a difference
Any questions?