Post-Intensive Care Syndrome (PICS)

Special Guest: Jimmi Hatton Kolpek, PharmD, BSPharm, FCCP, FCCM, FNAP

What made you interested in PICS?

- Her entire research and professional career had been managing acute traumatic brain injury patients and trying to save the brain
- During her sabbatical year at an acute rehab facility, she realized there is a lot that happens to patients once when we save their life
- A presentation at Society of Critical Care Medicine (SCCM) Congress given by Joanna Stallings, PharmD discussed the issues as they relate to PICS and discussing the studies that have been published and the ongoing interest in brain injury from patients who aren’t ever admitted to a neurologic ICU
  - They were in a medical ICU and did not have any prior brain injury
  - This was fascinating to Jimmi
- When Jimmi returned from the SCCM Congress, she met with her ICU Recovery Team under the direction of Dr. Ashley Montgomery Yates
- Since that time, she has been working with Dr. Yates, Joanna Stallings, and the THRIVE Pharmacy group to learn more about PICS and become involved with the clinic

How long has PICS been a focus in the world of critical care?

- It has been known and studied in Europe before it gained traction in the US
- SCCM had a conference in September 2010 with stakeholders including outpatient providers, rehabilitation, and community care
  - Had a lot of feedback from patients and care providers that they were having problems after ICU discharge
- Brought this group together at the conference to address long-term consequences of critical illness
  - Wanted to define them, understand what they look like, develop a common terminology and nomenclature to define and seek improvements in the continuum of care
Did something happen that thrust PICS into the spotlight?

- Increasingly, patients were presenting to their PCP with symptoms that were not recognized prior to the acute event that happened to them
  - Difficulty sleeping, long-term weakness, difficulties in staying employed
- Between the patients and providers, there was recognition that this was happening at an increasing rate
  - This launched the focus to recognize this as a public health issue, find out how large it is, and understand how we can improve these outcomes
  - We’ve known this happens after a neurologic injury (e.g. TBI or stroke)
    - Didn’t recognize that patients without those injuries can still be suffering and have cognitive changes
      - These changes line-up with a 3-6 month GCS score similar to a patient who did have an acute brain injury
    - This thrust it into the spotlight as the number of people surviving keeps getting higher

How is PICS defined?

- A change or worsening of cognition, physical, or psychological (mood changes) function after a critical illness
  - At least one out of three domains, but could be all three
- Physical change meaning muscle weakness
  - Can range from a full neuromuscular dysfunction to simple weakness and difficulty in breathing/exercise

Can patients show signs of PICS as an inpatient, outpatient, or both?

- Wouldn’t consider the diagnosis of PICS until after ICU discharge
  - There are admission diagnoses that may mimic symptoms of PICS
  - However, there may be psychological consequences as a result of what happened to them in the unit
    - These factors in the patient’s ICU experience can set them up for a development of PICS long-term
    - Monitor to prevent those risk factors from developing into PICS
May see symptoms post-ICU discharge while patients are still in the hospital, but it’s still hard to discern exactly what those symptoms may mean or be

- 4-6 weeks post-hospital discharge would be when we are thinking about a diagnosis of PICS
- Grown to realize that family members are going to be significantly affected as well
  - 1 in 3 family members or even higher
  - They will go through some changes as a result of the ICU experience with their loved one
- Family members should be a component of what we focus on when we see these patients
- We need to be sensitive that family members may show signs of stress, depression, and anxiety while they are in the ICU

How common is PICS? Is this something we’re seeing in ICUs across the country or world?

- That data is still coming
- From what we know, estimates range about 50% or higher likelihood of developing 1 or more of the components of PICS if you are a survivor of ICU care
  - That is independent of families, which is a newer group we are studying
- 64% of patients in an observational study showed some symptoms of PICS at 3 months
  - Could be any of the three domains or a combination
  - Over 50% of those patients still showed symptoms at 12 months
    - This is becoming recognized by some as a public health issue

What are risk factors for patients developing PICS? Are they exclusively prior to admission diagnoses or can patients develop risk factors while being hospitalized?

- Patients admitted to the ICU with pre-existing cognitive, psychiatric, physical disorders, or chronic diseases seem to struggle with recovery
- We are finding a similar pattern for risk of PICS
- Risk of PICS is increased if you have pre-existing conditions that affect cognition, physical, or psychologic function
- Patients who are older, struggle with alcoholism/substance abuse, prior history of a stroke, or are considered frail (overall general weakness) increase the risk of cognitive impairment after the ICU
  - Women, younger (age < 50), lower education level, and pre-existing disability increase the risk of anxiety, depression, and PTSD
- Specific ICU-related risk factors:
  - Prolonged mechanical ventilation, duration of delirium (very important), sepsis, ARDS, and renal replacement therapy
  - Sedation/analgesia, prolonged bed rest/immobility, and corticosteroids

How long can patients experience PICS post-ICU discharge? How does PICS affect their recovery?
- Early in our research to be able to fully define the duration
- We know that patients can experience symptoms up to 1 year
  - Likely that it may be longer for some of them
- Does affect recovery both early and late due to:
  - Struggle with poor sleep, nightmares, anxiety, ongoing weakness, struggle with breathing disorders (due to intubation and tracheostomy)
  - Mood changes then impacts their family dynamics
    - What their family is experiencing and seeing wasn’t there prior
  - Struggle to get back to their job that they held before the ICU admission
  - Changes in the ability to function at an executive level or concentrate (memory issues)
- All of these things affect their ability to get back to life as they know it, and they have a new normal
- As ICU Pharmacists, we have to remember to communicate with community and ambulatory care Pharmacists
  - May impact patients’ abilities to be compliant, understand them, and determine which medications they should be taking
What is the role of peer support (community, support group, online chat room, etc) in terms of recovery from critical illness?

- Patients and family members can benefit from these online support communities
  - Chat rooms and Facebook groups
  - Also, the opportunity for patients to become advocates to help other patients
    - As they have recovered, these patients want to go back and help patients who are still in the ICU
    - Go in and talk to families to help them prepare
- These activities are critical
  - Patients and families can feel isolated and confused
- Can also help other healthcare providers to help understand what is actually happening to these patients
  - A recent finding that our own clinicians don’t understand patient experiences and the impact of these
- The more we can learn from our patients about what is happening in their life and help each other understand this, then we can begin to tackle this problem and achieve the outcomes we’d like to see

As an inpatient, are there things we could do as part of the ICU multidisciplinary team to help prevent the development of PICS?

- Identification of the ABCDEF bundle
  - One of the most promising findings from early research on this
- An interprofessional effort where each patient is encouraged to:
  - A (awaken; daily awakening trials from sedation)
  - B (breathing trials; spontaneous breathing trials [SBT])
  - C (coordinated communication/care across team members)
  - D (delirium monitoring and appropriate management)
  - E (early ambulation in the ICU if possible)
  - F (family engagement and partnership)
    - Critical component to help patients prepare for and possibly prevent the development of PICS
- ICU diaries
  - One experience comes to mind, a patient’s husband kept a diary while his wife was in the ICU and shared this diary with the ICU Recovery team
Helps the patient and their family be able to remember what happened
Can be helpful, but no strong data to support its use
  - But no information to discourage its use
  - Can help answer questions that come up post-discharge
    - “Why can’t I sleep?” “Why am I having nightmares?”

Patient and family centered care
- Go back after rounds and touch base with the family
- Make a connection between the ICU team and the patient/family
- Help them understand and educate them what may be coming
  - Answer questions candidly
  - Encourage the family to have some positive activities that can help improve the patients’ outcomes
    - Don’t leave the TV on all night
    - Keep a normal day/night schedule
    - Make sure they have glasses/hearing aids
    - Play music they enjoy
    - Family pictures around the room
    - Help orient the patient
      - Helps the family feel that they are contributing to the recovery

Any specific medications that can help treat/prevent PICS? Or is it focused on preventing/avoiding medication-associated ADE?
- This continues to be a debate with what we think of in terms of medications and their contributions to the onset and risk of PICS
- When using sedatives, analgesics, and antipsychotics need to keep a balance
  - Create treatment goals and duration goals
    - If we undertreat, we may precipitate delirium or anxiety
    - Need to create endpoints to allow awakening trials or a reduction in the dose when appropriate
  - Haven’t seen a big difference in duration of delirium with antipsychotics but these agents do have differences in their side effect profile
  - Neuromuscular blockade (NMBA)
    - Ensure appropriate sedation and analgesia while receiving NMBA
- Early nutrition and glucose control
- Judicious use of corticosteroids
- Treatment of PICS
  - Focused on symptomatic relief in the outpatient setting
    - Look for anticholinergic burden which could impact cognitive function or breathing difficulties
- Overall, focused on high-quality care and comprehensive medication management
  - Optimize and streamline medications
  - Treatment endpoints
  - Monitoring tools
  - Listen to the patient to hear if the medications are still helpful

**How do patients or their families know when they should seek help after they leave the hospital?**
- Patients and their families need education on PICS and how it might manifest
  - They might not recognize what is happening to them if no one educates them beforehand
  - Their PCP might not even understand what is happening
    - Some implement a post-discharge call from an ICU multidisciplinary team member
    - Help them understand if there are new symptoms that arise or current problems persist or worsen that they should seek help
- Family members also should talk to their PCP as a first step
  - They may have symptoms of PTSD or problems from what the patient is experiencing
- This is where the ICU Recovery Clinic can be so important
  - There are also useful patient education tools online that can help define what PICS looks like
  - But if you don’t expect or know about PICS, it will be hard to understand what is happening and where to turn for help

**What is the process for being seen in the ICU Recovery Clinic at the University of Kentucky?**
- Screen patients while they are in the ICU
  - Look for PICS risk factors
Meet with the patient and/or their family to see if they are interested in scheduling a follow-up visit to the clinic

Also accept referrals from other ICU teams

Look at specific criteria for which patients and/or families the ICU Recovery team speaks with:
  - Mechanical ventilation > 48 hours, new tracheostomy, vasopressor therapy > 72 hours for shock syndrome, new-onset organ failure through discharge, reduced ejection fraction (EF), DVT/PE, ICU-acquired weakness, delirium, ARDS, or ECMO

Provide them with a pamphlet, cards, email, and phone numbers for contact

Clinic visits are long, especially the first visit which is unusual for clinic visits
  - The number of patients continue to increase
  - Depends on if the patient can make it back to the University of Kentucky in Lexington
    - Challenging because the clinics may not be close to where the family lives

Who comprises the ICU Recovery Clinic team and what problems do you focus on helping to prevent or manage in the clinic?

Team comprised of 2 ICU Physicians (rotating on a regular basis), DNP, PT, LCSW, and Clinical Pharmacist
  - Meet weekly as a team
  - During a visit:
    - Pharmacist review of medication-related issues
    - Discuss what’s happening with the family
    - Get the patient comfortable and relaxed
      - Identify any acute issues
    - Share the findings with the multidisciplinary team and the various team members cycle through
      - Focus on patient-specific issues
        - One example was a patient trying to find a place to exercise that isn’t a large gym with lots of people
  - Coordinate care across visits and help patients and providers have a common place
How can we help patients after their discharge in locations without those resources?

- These resources are used even in the UK ICU Recovery Clinic
- SCCM Patient and Family portal
  - Sccm.org/MyICUCare/Home
  - Provides access to a PICS support group on Facebook, a guide to understanding PICS, glossary of terms
- Patient communicator app
  - Can facilitate documentation of PICS symptoms
  - Keep track of medications and responses
- These can be useful for PCP communication to help understand what the patient is trying to say
  - Can facilitate referrals to a specific clinic if needed
- Return a sense of control to patients and their families
  - This is a powerful recovery tool
  - Can help empower these patients
    - Helps them understand this is a national issue and others are dealing with this

Do we do a good enough job preparing patients and their families for what challenges may lie ahead after they leave the ICU?

- We can do better both inpatient and outpatient
  - But we are also still learning about exactly what to expect and how these symptoms may manifest
- We are improving but we have a way to go
- It can be difficult for patients to comprehend the magnitude of change experienced during the ICU admission and survival
  - Helpful for us to communicate and provide some tools for when patients and their families are ready to hear some of this information
  - Must listen and work with the inpatient team to find the best time to have those conversations
    - Listen carefully to the patient and family when they are discussing their issues
What can we do better to help prevent or better manage PICS?

- Partner with outpatient providers
  - Transitions of care
  - Not sure we fully appreciate the significance of this as it relates to those who have survived an ICU stay
    - Comprehensive medication management
- Systems that begin improving communication across domains
- Systematic evaluations of methods and introduction of new communication tools so we can understand what families are experiencing and better define what is happening to them
  - One pilot study has begun to look at the obstacles in the inpatient and outpatient setting
  - Can help us define terminology and define the questions we need to answer
- Work together and empower patients
- Have concrete contact information and medication information so that others can call back and discuss any issues if outpatient providers don’t have access to electronic medical records
  - Helpful for providers and patients alike

If you had to choose the most important points on PICS to re-emphasize what would those be?

- As providers we need to be vigilant about the impact of ICU care on our patients and their families
  - Saving a life and letting them go home is just Step One
  - Optimize high quality critical care pharmacotherapy
  - ABCDEF bundle implementation
- Every member of the family will be affected by the ICU experience
- PICS impacts quality of life for the family and the patient for a while and maybe a very long time depending
- Build a comprehensive support system by partnering with outpatient providers
  - Give best treatment
  - Complete research
- Optimize medications
  - Pain is controlled
  - Patient can participate in PT/Rehab
- Chronic disease conditions are appropriately managed
- Pharmacy partners in the community and ambulatory setting have access to us in case they have questions