



what nurses
need to know
about

SEPSIS

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Season 3 Episode 3 - What Nurses Need to Know About Sepsis Show Notes

What Nurses Need to Know About Sepsis

In this episode, we interview Michael Ackerman DNS RN APRN-BC and Tom Ahrens, PhD RN FAAN on **sepsis**, priorities for the new nurse, current sepsis treatment trends and recommendations.

Basic Definition of Sepsis

- Sepsis is the body's response to an infection.
- There is no cure for sepsis. We have nothing for it, just supportive care.
- The definition is very misleading, but we know it starts with an infection.
- People don't die from infection, they die from the body's response to infection.
- Once sepsis starts, we don't know how to stop it.
- We use the SIRS criteria to determine if sepsis has occurred and there is controversy if that is enough.

- CARS and MARS are other indicators
 - [CARS](#) - compensatory anti-inflammatory response syndrome
 - [MARS](#) - Mixed Anti-inflammatory response syndrome
- There will never be one treatment for sepsis - it depends on the phase that it is in.

Dr. Marik's Sepsis Study

[Dr. Marik's Study About Vitamin C and Lowered Sepsis Mortality](#)

- Theory - by giving vitamin C, anti-oxidants, thiamin, low dose steroids, retrospectively they saw lower mortality
 - Danger - if people abandon conventional therapy there is risk because this hasn't been studied in depth.
 - News articles spin this as a cure. Family members ask if their loved ones are getting enough vitamin C.

Early Recognition of Sepsis

Good sepsis care from ED nurse to the sepsis patient looks like:

- Key is recognition. It's not simple, and actually somewhat vague.
- Examples of recent sepsis cases
 - [Sore throats](#) - people die of sore throats
 - [Cut on the leg](#) from gym class, sent home with GI symptoms, died 4 days later
- Trust your intuition. If you think it's wrong, follow it up.
- Use assessment skills of vital signs. If you suspect infection and vital signs are messed up, push it to the next level.
- **Draw cultures and labs before you start antibiotics.**
 - If you are drawing cultures, draw a lactate *and a procalcitonin level*.
- Listen to the patient or family member - are they acting differently?
- You can't afford to miss sepsis.
- Look for things that could kill someone first. After you rule that out, then look for other hypotheses.

Sepsis Tips for Med Surg Nurses

This is the leading cause of death - it should be taught in nursing school

- Graduating as a nurse and not knowing much about sepsis is scary
- Do doctors know much about it? Family members bring up concerns and doctors may explain it away.

Pay attention to low temperatures

- It's a sign their immune system isn't working properly
- It goes along with low white blood cell count too

- “[Anergy](#)” - if they can't illicit their own immune response, that's troublesome.
- First response to sepsis should be “does the patient have an advanced directive?”
- This can get bad quickly, but is that what the patient wants?

What a Med Surg Nurse Should Look For Before Hypotension

- Hypotension is a late sign of sepsis.
- By the time we get hypotension, we are in the shock stage
- A lot of clinicians recognize sepsis at this stage
- The SIRS criteria can tell you a lot
- Draw a lactate, see if it is normal. It is simple, cheap, you usually can't be fooled by a high one.
- Ask for blood cultures
- A procalcitonin can be helpful with bacterial infections.
 - The evidence is increasing that it should be used more often.
 - It should be in the screening repertoire

If Patient is Already on Antibiotics

What if they are already on antibiotics?

- If procalcitonin levels drop by 80%, the antibiotics are working.
- Get the procalcitonin levels regularly to check the efficacy of antibiotics.

Rapid Response Teams and Sepsis Rates

Do facilities that have rapid response teams of nurses that help evaluate patients increase the recognition of sepsis?

- The data on that is unclear
- Anecdotally, when sepsis became one of the rapid response calls, we did see more recognition of sepsis and more patients admitted to ICU.
- The floor nurse needs help.
- A rapid response nurse is typically someone that is a critical care nurse that has a pretty good grasp of most disease progressions that may be able to help you recognize or think through what is going on with your patient.
 - They are a wonderful resource to have and all nurses should use them if they have them.
- Rapid Response Teams have their own protocols too to recognize and evaluate possible sepsis.

New ICU Nurse Tips for Sepsis

Brand new ICU nurse tips, for the times when a patient is in ICU with known sepsis.

- CVP is not good as a measure for fluid resuscitation.
 - In heart surgery, you have to have a CVP to see pressure in the right side of the heart.
 - But to use it as an indicator of preload is just not right.
 - In the new guidelines, they eliminated CVP.

What Changed in the ICU with Sepsis

- What has changed in ICU - back in 90s, we didn't have any real protocol. Then they moved to protocolized care with 6 hour and 9 hour bundle, and now they moved away from that again.
 - Criticism of the protocolized care was it doesn't give the skilled clinician, intensivists, typically, the ability to modify the care based on the patient.
- The new guidelines use the qSOFA score.
 - Derived from SOFA score
 - A European model used to assess the severity of illness and risk of mortality
 - It is 3 things: Change of mental status, respiratory rate greater than 22, drop in blood pressure.
 - The data says that this is a high predictor of mortality.
 - The problem is: it isn't a screening tool.
- They are still using fluid
 - It gives more discretion to the provider of how much fluid
- They use blood cultures, cultures in general, and antibiotics
- Use more dynamic measures of fluid resuscitation
 - Echo
 - Ultrasound
 - Passive leg raise (PLR)

Dr. Merrick's New Study Causes Turmoil

- Families see it on the news and they ask why you aren't using vitamin C
- It's difficult to have an evidence-based conversation with a family desperate for using anything that could help.
- That's the family's response - "but what's the harm?"
- It puts providers in a very difficult spot, when they have to defend why they aren't going to use vitamin C.
- There is no real benefit to deny it to a family member that is asking for it, the risk is low, but chances are it won't work.

More Specific Studies About Sepsis Need to Happen

- Precision Medicine Initiative - We treat everyone as if they have the same genotype and they don't.
- There is neonatal literature that is very clear out of Cincinnati Children's Hospital
 - They draw blood on kids for years and try to genotypically identify which kids get septic, which ones survive sepsis, and which kids die
 - There is a difference in them genetically.
- We know so little about sepsis. We throw everything we can at it, does anything work?

ICU Nurse with septic patient that won't make it, how do you know when they won't survive this?

- It's very difficult to tell
- You have to take the patient's history into consideration
 - 90 year old from nursing home is different than 40 year old otherwise healthy man
- If procalcitonin isn't coming down by a lot, something is wrong.
- If mixed venous oxyhemoglobin levels are going up, that's a horrible sign.
 - It shows the cells aren't using oxygen.
- Tell family early on. Never surprise them.
- Show them numbers. Show them *the FiO2 numbers*.
 - This number should be better in a couple days. If it still isn't, they know it's not getting better.
- Talking to the family is a skill for nurses and providers that not everyone has.
- Opinion: every ICU should have a nurse that is paid just to interface with the families.
 - Job title is ICU advocate
- Let the family know they may hear different opinions from different specialized doctors (like the ICU doctor and the neurosurgeon).

90-Second Soapbox on Sepsis from the Experts to the Brand New Nurse

- You are going to see this almost every day, watch out for it.
- You will find people develop sepsis that you don't expect to have it.
- The key is, it always starts with an infection, real or suspected.
- Watch that person, make sure they are not getting worse.
- Use advanced technologies like lactates and procalcitonins and dopplers to assess the patient.
- If the patient isn't acting the way they normally are, something is wrong.
- Trust your gut. Trust your assessment skills and use them.

- **Find your voice.** You are the patient advocate. If you work at a place that doesn't allow you to speak up, go someplace else.