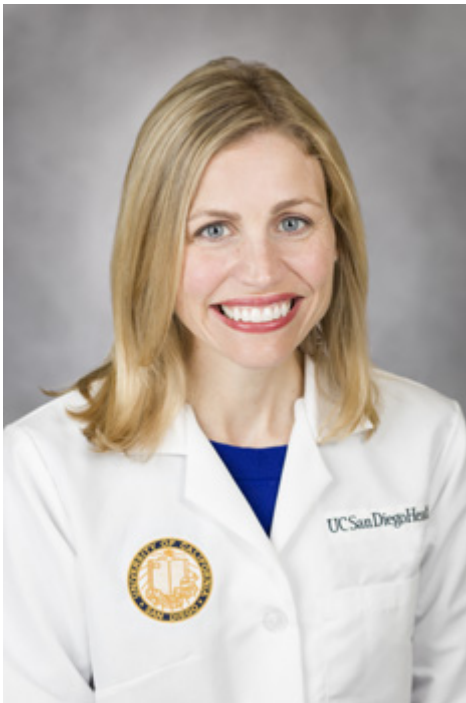


Intravenous Antibiotics and the Rise of Resistance: A Q&A with Michele Ritter, MD

By Christina Johnson | May 01, 2017

Most of us probably had strep throat as a child. It's almost a rite of passage getting your throat swabbed at the doctor's office, taking antibiotics, staying home and getting better.

But what if your infection had not cleared up? What would have happened next?



Michele Ritter, MD, is an infectious disease specialist whose expertise is in treating “tough” microbial infections that do not respond to standard oral antibiotics.

She directs UC San Diego Health’s parenteral (non-oral) antibiotic therapy program (OPAT), which allows patients to avoid hospitalization for serious infections by receiving intravenous (IV) antimicrobial therapies in a clinic or at home.

Question: What types of infections require IV antibiotics and why?

Answer: We use intravenous antibiotics for very severe infections, such as [sepsis](#) [↗](#) because intravenous antibiotics reach tissues faster and at higher concentrations than oral antibiotics. We may also use intravenous antibiotics for infections in parts of the body where penetration of oral

antibiotics is less effective, such as in the spinal fluid and bone. Finally, IV antibiotics are used for infections that are resistant to oral antibiotics.

Q: How do people usually acquire infections that need to be treated with IV antibiotics?

A: Most patients who require IV antibiotics have had some previous medical problem or hospitalization that has made them more prone to infection. Sometimes, though, people get a deep or serious infection from bacteria living on their own skin. The most common of these infections are caused by Staphylococcus bacteria, including [methicillin-resistant Staphylococcus aureus \(MRSA\) bacteria](#) [↗](#).

Q: You hear a lot about hospitals being a source of MRSA infections. Why?

A: In general, health care facilities (including hospitals and nursing facilities) have a much higher rate of resistant bacteria, simply because they care for people with the most severe infections who have received antibiotics frequently.

Q: How does a person who is healthy and has not been to a hospital or nursing facility get a MRSA infection?

A: MRSA bacteria are found in the community and in places like coastal waterways. The bacteria can be spread from skin-to-skin contact between people or from contact with contaminated water. Many people may be “colonized” with MRSA and not know it and may never become sick. However, it is also possible for MRSA to cause an actual infection, especially in patients with other medical problems or those undergoing surgery or other procedures. Due to this risk, patients are frequently screened for MRSA prior to surgical procedures and protocols are followed to attempt to “decolonize” the bacteria from the patient’s skin prior to surgery.

Q: Is the use of IV antibiotics related to a rise in antibiotic-resistant infections?

A: Absolutely. As antibiotic resistance has increased, our ability to use oral antibiotics to treat infections has declined. Infections that generally would not require intravenous antibiotics now often do.

Q: One of your research interests is “antimicrobial stewardship.” Can you explain what this means?

A: Antimicrobial stewardship means using antibiotics in a judicious way in order to avoid the emergence of resistant bacteria. Frequently antibiotics are prescribed for illnesses that don’t require and don’t benefit from antibiotic therapy. Probably the most frequent case is with viral illnesses, such as colds. Antibiotics kill bacteria only and don’t have any effect against viruses.

Q: How can we all be antimicrobial stewards?

A: By taking antibiotics only when and how prescribed and understanding why physicians don’t always rush to start antibiotics whenever we feel sick. It is essential to use antibiotics smartly, as the rate of emergence of multi-drug resistant bacteria continues to increase.

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