Memorial Sloan Kettering Cancer Center

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On Cancer

Why Do Germs Become Resistant to Antibiotics? An MSK Program Is Focused on Avoiding this Problem

By Julie Grisham, **Wednesday, May 22, 2019**

If people take antibiotics when they don't need them, they may end up with bacteria that can resist those antibiotics.

Summary

In this Q & A, infectious disease expert Susan Seo discusses MSK's Antibiotic Management Program. It ensures that antibiotics and other antimicrobial drugs are used responsibly.

The rapid emergence of drug-resistant microorganisms is "a global crisis that threatens a century of progress in health and achievement," according to a recent **report** from the World Health Organization. Increasingly, experts have been sounding the alarm about the evolution of drug resistance. As a result, many common infectious diseases may become untreatable.

The best way to prevent microorganisms from developing resistance is ensuring that antimicrobial drugs are used properly. Memorial Sloan Kettering was one of the first hospitals in New York City to recognize and address this problem. In 2001, MSK established a program to oversee the use of antibiotics and other antimicrobial drugs. It has since served as a model for other cancer centers.

In an interview, **Susan Seo**, an infectious disease doctor who leads MSK's **Antibiotic Management Program**, talks about how MSK is leading the way in ensuring that these drugs are used responsibly.

Susan Seo

Why is a cancer hospital focused on antibiotic use?

Infections are a major complication of cancer treatment. We know that preventing and treating them improves patients' overall health and outcomes.

People with cancer may be more prone to infections because of the underlying disease itself. They may also have weakened immune systems as a result of the therapy they're receiving to treat the cancer. Subsequently, most people with cancer receive antibiotics at some point during their treatment.

Why is it important to ensure that antibiotics are used properly?

If people take antibiotics when they don't need them, they may end up with bacteria that can resist those antibiotics. People who have infections due to antibiotic-resistant bacteria can have longer and more serious infections. They may have limited treatment options. And they can die from antibiotic-resistant infections. In addition, people who take a lot of antibiotics can develop side effects. These might include a rash or antibiotic-related diarrhea caused by the bacterium *Clostridium difficile.* So it's important that antibiotics are prescribed to people only when they are truly needed.

I think of antibiotics as a precious resource. If we run out of effective antibiotics to treat or prevent infections for people with cancer, then giving chemotherapy or doing surgery becomes very high risk.

What is the role of the Antibiotic Management Program at MSK?

Antibiotic stewardship is a commitment to using antibiotics optimally and safely. My team includes infectious disease–trained clinical pharmacists. Together, we assist doctors and nurses at our hospital in ensuring that antibiotics are prescribed with the appropriate drug, dose, and duration. This allows the drugs to wipe out infections that have been diagnosed and prevent others from occurring. We want to ensure that antibiotics are stopped if there is no evidence of infection.

Members of the program are engaged in teaching our colleagues about antibiotic stewardship because it's everybody's responsibility to use antibiotics wisely. In this way, we can preserve them not just for today but for all the generations that come after us.

Antibiotic Management Program

Our Antibiotic Management program optimizes and oversees the use of antibiotics in the hospital setting.

Learn more

Can you give an example of how this program has made a difference in patient care?

The problem of antibiotic resistance is due to misuse or overuse of antibiotics. A common example is taking an antibiotic for a viral infection, such as the common cold.

We recently did a collaborative study with our colleagues on the **Lymphoma Service**. We wanted to see how many of the people who had cold symptoms were getting antibiotics.

We then developed guidelines that describe the features of common upper respiratory tract infections, the diagnostic workup, and how to manage them. We used the Centers for Disease Control and Prevention's recommendations for treating upper respiratory tract infections.

We educated doctors and nurses about this issue. The guidelines were posted in the workroom pods. We then looked to see if this made a difference. Happily, we found that the rate of antibiotic prescriptions for upper respiratory tract infections dropped. We recently presented this work at MSK's Quality Improvement Fair.

My team is now pondering how to build on this work. One focus is keeping this effort going in lymphoma care. We are also thinking about adapting this approach for other outpatient clinics at MSK.

Comments

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Debra Cruger

Jun 5, 2019 • 1:31 PM
I was told that I am drug resistant to first line drugs for bladder infections. What does this actually mean?

Memorial Sloan Kettering

Jun 5, 2019 • 3:07 PM
Debra, we recommend that you consult with your treating physician about your resistance, as every case is affected by many factors. If you would like to consult