ICU
MANAGEMENT & PRACTICE

Time goes by and antibiotics linger on

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As I usually do when I'm writing, first I'll throw a random fact--not so random--with a slight relation with our subject. The thing is, I lack good metaphors.

Some time ago I stumbled on a fantastic article by Holloway discussing a new approach to treating multi-drug-resistant tuberculosis. The climax is: in Switzerland, England and New York, tuberculosis-related deaths started to decline decades before the introduction of streptomycin, which was the first antibiotic used against tuberculosis. Of course, the decline rate increased in the antibiotic era. However, make no mistake, if we were in a Batman movie, antibiotics would be Robin. Essential to the plot, but not the main character. That's it. The link between my random fact and the purpose of this post.

Why do so many physicians believe antibiotics are the main character in every patient with a possible or confirmed infection?

To make things worse, not only do tons of doctors think that way, but they also blindly believe that the more time Batman is on the screen, the better the movie. “Wait a minute Mister! We’re not like that! We’re among the top-ranked badass critical care docs evidence-based-culture-guided early de-escalation type of guys”. I gotta only one thing to say: Liar liar, pants on fire! Fortunately, I have some data to support my insults. A Canadian study showed a median duration of antibiotic treatment for bacteremia of 14 days. In the U.S., 50% of empirical antibiotics are continued in the absence of infection for more than 72h. A global survey showed that although there was substantial heterogeneity between ICUs, most cases of bacteremia (more than 80%) are treated for 8 days or more, and finally, just to exemplify, an observational study showed that 30% of antibiotic use was deemed unnecessary in a university hospital.

What causes us to behave like that?

Of course, there are tons of cognitive biases behind it, but mind’s misconceptions are not an excuse, especially when we have literature advocating in favour of the conscious use of antibiotics. Complicated urinary tract infection? No more than 7 days, sometimes 5 is enough. Pneumonia (community-acquired, hospital-acquired, ventilator-associated)? Go for less than 8 days. Uncomplicated Staph bacteremia? Shorter courses (10 days) do not impact on mortality. Even surgeons are realising that less is more, from appendicitis to other intra-abdominal infections. It's shameful to see surgeons using only 3 days of antibiotics while some intensivists are still using the lunar calendar to guide treatment duration. Ok, more NEJM-type-of-trials are still needed, but we can’t deny that for the most common ICU infections (intra-abdominal, pneumonia and urinary) all roads lead to shorter antibiotic courses. Why do we stop giving fluids after our patients are no more hypotensive (I won’t discuss fluid responsiveness here, but you got the idea) and we still keep injecting them with antibiotics when they get better? “Oh, because we’re afraid of recurrence”! Really? Every patient will have a recurrent infection if you stop antibiotics early? Seven days, fourteen days… Who invented this? Why not 4.5, 5.66 days? Why not the amount needed?

Antibiotics don’t replace good doctors. Indiscriminate antibiotic use is a reckless attitude that not only dramatically increases healthcare costs, but also puts our patients' lives in danger. This is not an “I’ll deal with it tomorrow” or “what difference one more day will do” type of thing. We already missed the bus.

But what can we do?

We can rely on evidence-based knowledge and self-discipline all doctors have, and with a pinch of goodwill and time, things will settle. Of course, this is a lie. Changes like this only come from the top down. But there is a light at the end of a vancomycin bottle. Antibiotic Stewardship Programmes might be the answer we were looking for. For more than two decades this idea of a multidisciplinary and multifaceted strategy aimed to ensure rational antibiotic use among other things has spread, and its benefit has been proven, from reducing costs to decreasing *Clostridium difficile* infection rates, with everything in between. This makes perfect sense. A multilevel intervention to solve a huge problem. It’s impossible to think we can overcome this issue with single-minded interventions like good doctors with some knowledge about antibiotic usage; there are too few of them. Like everything in critical care, this is a team effort.

Back to our tuberculosis discussion. It emphasises that in patient care, no magical molecule is the answer. Instead, it's part of a very complex and dynamic set of possible answers. Late at night, after reading this, I know you'll evaluate your practice, but unfortunately, next morning things still will be the same, and I bet a beer you'll have a patient receiving unnecessary antibiotics in your unity. I won't judge you (I'm lying, I'm judging you). Bold actions require attitude. Maybe you weren't aware of the evidence, maybe somebody told you antibiotics grow on trees, or maybe somebody in your anti-vaccine group told you multidrug-resistance is a lie. Now you know. We have the evidence, I'm telling you antibiotic costs A LOT of money (ok, some of them used to grow in nature), vaccines work and multidrug-resistance is real. Now, it is up to you.

Zoom On Bruno Tomazini

What is your top management tip?
Team work is the engine behind every ICU. Humbleness and respect are the invisible fuel. Respect your team, from the cleaning lady to head nurses. You need them more than you can imagine. And always, work hard and fear nothing.

What are your personal interests outside of work?
I love travelling, but since books and music are cheaper, I'm all eyes and ears.

Your favourite quote?
"Man is...a thinking erratum, that's what he is. Every season of life is an edition that corrects the one before and which will also be corrected itself until the definitive edition, which the publisher gives to the worms gratis." Machado de Assis

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