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## Patients benefit when antibiotics stopped after 24 hours if bacterial infection unlikely: SGH

Reviewing antibiotics procedures here | THE BIG STORY | The Straits Times



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SINGAPORE - Each year, more than 100 patients at Singapore General Hospital (SGH) are able to go home 7.5 days earlier, saving about \$11,000 in treatment costs - all because their use of a strong antibiotic was stopped after just one day.

An expert team reviewing their cases had advised their doctors that it was highly unlikely that these patients had a bacterial infection, so there was no need for them to be on an antibiotic.

About half the 80,000 patients admitted to SGH are given antibiotics, but not all of them have bacterial infection.

It takes about three days for test results to tell if there is infection. So if the symptoms point to a possible bacterial infection, doctors want to start treatment as soon as possible, rather than risk patients' condition worsening and becoming more difficult to treat.

About a third of patients given antibiotics are prescribed a broad spectrum antibiotic - one that would work against a wide variety of bacteria.

This is fairly strong medicine that wipes out the microbiome in the gut, often resulting in patients suffering from diarrhoea. They may also get skin rashes, liver and renal problems, as well as a dip in platelet count.

SGH has been doing these reviews of patients in the first 24 hours after admission since 2010. It is the only hospital in Singapore to do so.

This saves about \$1.3 million a year. More importantly, patients are saved from the side effects of the drug, and their risk of developing antibiotic resistance is reduced.

Because they are taken off the antibiotic early, they are less likely to suffer from the side effects, and are able to get well faster and be discharged earlier.

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Most hospitals review the use of antibiotics after three days, when the results of the tests for bacteria are available.

SGH opted for earlier reviews because the longer a patient is on an antibiotic, the higher the risk of resistance, said Associate Professor Andrea Kwa, assistant director of research at SGH's department of pharmacy.

She said the broad spectrum antibiotic in question is "the last line of safer antibiotics", and if patients become resistant to it, the next line of antibiotic treatment is "very toxic", she said.

"The once easily treatable illness, such as urinary tract infection, become difficult to treat, leading to longer hospital stays, larger medical bills, and higher risks of death."

Prof Kwa had led a team in a retrospective study of 12,000 patients at the hospital from 2010 to 2014. The results were published in the International Journal of Antimicrobial Agents in May.

In every case where the team suggested a patient be taken off antibiotics, the full test results could not find any bacterial infection.

In fact, about 40 per cent more patients could have gone down this route, but their doctors chose not to stop their antibiotic treatment.

In terms of patients returning to hospital within 14 days, those who were taken off the antibiotic after one day also fared better.

When asked why other hospitals here have not adopted the same practice, given the good results, Dr Jasmine Chung, director of SGH's Antimicrobial Stewardship Programme, said different hospitals approach the issue differently.

She added that SGH is able to offer the 24-hour review because it has the technology, support from infectious disease specialist pharmacists and buy-in from doctors.

It has five pharmacists specialising in infectious diseases, including Prof Kwa. Other hospitals may have one or two, or even none.

Even today in SGH, there still is not complete buy-in from doctors, who continue giving about 30 per cent of patients the antibiotic in spite of the team's recommendation that it was not necessary.

How about the advice that patients must always finish the course of antibiotics? Prof Kwa said that's true only if there is bacterial infection, to prevent resistance in the bug. But it doesn't do any harm to stop the course early if there is no infection.



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