Medical Xpress

Planning for bacteria in cancer patients may help hospitals fight infections

January 23 2013

What cancerous conditions lead to what kinds of bacterial infections? If doctors knew, they could predict which patients would likely benefit from pre-treatment with certain kinds of antibiotics. A University of Colorado Cancer Center study published in this month's issue of the *International Journal of Infectious Diseases* shows the answer: *E. coli* and *Klebsiella pneumoniae* are especially prevalent in patients with lung and GI cancers, more so for *Klebsiella* if these patients have been treated previously with aminopenicillins.

"These are really dangerous infections. You think about *Klebsiella* – it can develop resistance really quickly. And these patients have generally been in and out of hospitals. If you can't treat the infection early, it can quickly become a serious and life threatening condition," says Andrés Felipe Henao-Martínez, MD, clinical fellow in infectious diseases at the CU Cancer Center and University of Colorado Hospital.

His study looked at 462 patients with bacterial blood stream infections who were admitted to hospitals for treatment. Of these patients, 203 had cancer and 259 did not, allowing Henao-Martínez and colleagues to explore the clinical and microbiological differences between these populations. Interestingly, Henao-Martínez could show that most infections existing in cancer patients were acquired in hospital settings and not in the community, while non-cancer patients typically had community-acquired infections.

"Normally every hospital has a spreadsheet, an antibiogram, listing the

bacteria and their rate of antibiotic resistance they've found in their patient population. But if you can predict ahead of time what bacteria you're likely to encounter, you can prescribe more targeted antibiotic therapy before infections create complications," Henao-Martínez says.

For example, previous treatment with aminopenicillins, like amoxicillin, and the presence of cancer seemed to significantly increase the likelihood of *Klebsiella* infection .

"Klebsiella pneumoniae is largely resistant to amoxicillin – with the immune system compromised by the cancer and by chemotherapy, and with other bacteria largely wiped away by the amoxicillin class of antibiotics it appears that *Klebsiella* is left to flourish with little competition in patients with cancer" Henao-Martínez says.

The group recently submitted a paper detailing genetic differences in outcomes in this population of bacterially infected patients admitted for treatment.

Provided by University of Colorado Denver

Citation: Planning for bacteria in cancer patients may help hospitals fight infections (2013, January 23) retrieved 27 April 2024 from https://medicalxpress.com/news/2013-01-bacteria-cancer-patients-hospitals-infections.html