

How big problem antibiotic resistance is among pediatric patients?

We see increasingly children with the resistant bacteria in the hospital, and they have severe infections and they can be very difficult to manage. We see also resistant bacteria in children in the primary care where they have common infections for example urinary tract infections and the resistance can make the treatment more complicated and also increase the costs of treatment. Children are especially vulnerable for two reasons. First is that new antibiotics that are effective against resistant bacteria often are not approved for use in children because there is lack of data of their pharmacokinetic and safety, and another reason is that microbiome in the children can be affected negatively by antibiotic treatment and that can have long lasting effects.

How do you see the role of pediatrician in preventing or curtailing antibiotic resistance?

Increasing antimicrobial resistance is closely linked with inappropriate and excessive use of antibiotics. To decrease overuse of antibiotics continuously education of pediatricians and other professionals is very important. Guidelines and other materials can be helpful here, but also communications with the families is highly important. Parents of children should be aware of the risks of overuse of antibiotics and the physicians should discuss with parents about the risks and benefits of the antibiotics in different situations.

How diagnostic tests can support the optimal use of antibiotics in pediatrics?

Ideally diagnostic tests should rapidly and accurately differentiate viral and bacterial infections from each other. This is possible in some cases by use of a test for viruses or bacteria or biomarkers that measures the whole response to the infection. Sometimes the situation is not that straight forward because of there can be bacterial colonization in the patient or there can be virus positivity also in healthy children and viruses and bacteria can cause coinfection so they are both detected at the same time. But however when correctly used diagnostic tests can direct the treatment and reduce overuse of antibiotics.

Among pediatric patients, what is the role of CRP and Strep A testing in point-of-care regarding antibiotic prescription?

CRP has been used for a long time as a marker of bacterial infection and physicians are well familiar with this test. Strep A test differentiates between streptococcal and viral throat infection and that is needed because a viral and bacterial throat infections cannot be differentiated from each other by the clinical findings alone. For both CRP and Strep A tests clinical judgement is needed when the test should be performed. Because if there is no clinical suspicion of bacterial infections these tests can detect colonization of Strep A or also for CRP accidental findings. But, when correctly used these tests can direct the management of the patient and reduce overuse of antibiotics. Key component here is that the results should be available rapidly so that they can have an effect on the decision making.