

Save time and lives with improved diagnostics

Q-linea develops and delivers solutions for the diagnosis of infectious diseases, with a keen focus on improving sepsis treatment while reducing antibiotic resistance. Christian Giske, professor and senior physician at the Department of Clinical Microbiology, Karolinska Institute, Sweden; Tiziana Di Martino, chief medical officer at Q-linea; and Jonas Jarvius, CEO at Q-linea, explain the benefits offered by the company's range of diagnostic equipment.

How important is faster diagnostics for better sepsis treatment?

Christian Giske: It depends slightly on where you find yourself. If you are in a setting with a high prevalence of resistance, it can reduce mortality by early detection of resistance. If you are in a setting with low prevalence of resistance you can minimise a lot of side effects related to broad-spectrum treatment by being able to target the antimicrobial treatment at a very early stage. In both situations, the patient will receive targeted treatment more rapidly. This is vital for the individual and for society as a whole, as it can also reduce the overall consumption of broad-spectrum antimicrobials.

What demands exist within the labs for new technologies and methods, for antimicrobial susceptibility testing (AST) analysis specifically?

CG: In general, the demands are for the technologies to have a combination of high capacity and reasonable cost, without compromising the quality of AST. As a result, it is important that the performance of any new method vis-à-vis the reference methodology is adequate. Speed is indeed of high importance, but not at the expense of lower reliability.

How will Q-linea's ASTar meet the need for better diagnostics?

CG: Q-linea has a large number of antimicrobials in its test system and an overall high capacity, which is also suited to the needs of large university laboratories. It has shown a general interest in conversing with key stakeholders and developing a system in close dialogue with healthcare professionals. The system is rapid and can potentially be used for other sample types beyond blood cultures, depending on the balance between clinical demand and cost.

How can earlier microbiological diagnosis of sepsis affect patient outcome?

Tiziana Di Martino: In a time-dependent condition such as sepsis, the initiation of earlier appropriate antibiotic therapy is a cornerstone for therapeutic success. Rapid information on the antimicrobial susceptibility profile of the pathogen responsible for the underlying infection is crucial to enhance antimicrobial stewardship, by allowing a rapid revision of the empiric treatment. This can both improve patient clinical outcomes and reduce the selection of resistant pathogens caused by the unnecessary use of broad-spectrum antibiotics. Notably, critically ill patients present severely altered and variable antibiotic pharmacokinetics and are infected by less-susceptible pathogens. Therefore, in critical scenarios such as sepsis and septic shock, MIC-driven optimal antimicrobial therapy may be a life saver.

“For us, full automation means that a sample can be analysed by any lab personnel at any given time. This thereby enables the fastest possible time-to-result and better patient outcomes.”

Jonas Jarvius

How will ASTar meet the future need for better infections disease diagnostics?

Jonas Jarvius: ASTar will meet the clinical need of faster and fully automated AST. For us, full automation means that a sample can be analysed by any lab personnel at any given time. This thereby enables the fastest possible time-to-result and better patient outcomes. This will aid clinicians to more rapidly

make key decisions when confronted with an infection resistant to antibiotic treatment; either to increase the dosage of the drug already prescribed or de-escalate the current treatment. In order to make actionable decisions for escalation and de-escalation, a diagnostic test needs to support a sufficiently large panel of antibiotics, which is offered by the ASTar panel.

The broad range of concentrations that ASTar supports is increasingly important, especially since EUCAST now focuses attention for better use of the former intermediate range (now susceptible, increased exposure) for tailored treatment recommendation. Thanks to the design of the panel disc, allowing for a broad range of twofold dilutions of each antimicrobial in broth, ASTar also supports the cornerstone of clinical microbiology by delivering true MIC values instead of extrapolated.

The flexible solution will also enable other sample types to be analysed on the

same instrument such as isolates, urine and respiratory samples.

In summary, ASTar will make it possible to analyse up to 50 patient samples during 24 hours, in combination with a broad panel delivering true MIC values. We believe that this is going to enable a dramatic change in patient outcomes and lab workflow. ●

www.qlinea.com