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Economic value of procalcitonin guidance

In the landmark Stop Antibiotics on Procalcitonin guidance Study (SAPS), Evelien De Jong and colleagues[1] showed that a procalcitonin-guided stopping rule was highly efficient and resulted in a 2 day (25%) shorter median antibiotic duration in the procalcitonin-guided group. This result was achieved by 44% adherence to the stopping rule (ie, if procalcitonin concentration decreased by 80% or more of its peak value [relative stopping threshold], or when it reached a value of 0·5 μg/L or lower [absolute stopping threshold]) within 24 h (per protocol), and by up to 97% adherence within 48 h, and led to significantly reduced mortality. As a result of timely and safe cessation of antibiotic therapy, lower median antibiotic costs per patient and lower cumulative total costs for the first course of antibiotics were observed in the procalcitonin-guided group than in the standard-of-care group (€150 082 in the 761 patients in the procalcitonin-guided group *vs* €181 263 in the 785 patients in the standard-of-care group).

The authors rightly argue that the total cost savings generated by procalcitonin testing should be balanced against the costs of undertaking 5425 procalcitonin measurements, and that "procalcitonin monitoring could offer many more important benefits than only reduction in antibiotic costs".[1] It is good health economic practice to consider all clinical and cost consequences relevant to inform the main decision makers. By assessing the published SAPS data, we note that about half a day in the intensive care unit (ICU) was substituted for half a day on a regular ward in the procalcitonin-guidance group. This reduction in ICU time reduces costs of total hospital stay by €660 per patient (regular ward day €564 *vs* ICU day €1885).[2,3] Further cost effects that are relevant from a broader health economic perspective accrue from lower antibiotic resistance rates associated with shorter durations of antibiotic therapy. Kip and colleagues[4] have reported a conservative estimate of mean cost savings attributable to lower antibiotic resistance of €189 per patient.

De Jong and colleagues[1] reported that a procalcitonin measurement cost of €4 would be outweighed by savings in antibiotics, while acknowledging that procalcitonin offers other, more important effects.[1] We agree that the better outcomes and cost savings achieved are not free, because investment in procalcitonin testing and costs for using the test accrue, yet only taking antibiotic savings into account vastly underestimates the added value of a procalcitonin-guided stopping rule for antibiotic use in critically ill patients. Beyond downstream cost savings that we estimate to be worth hundreds of euros per patient, procalcitonin testing has substantial added human value in terms of reduced mortality, which in some countries is suggested to have a monetary value between US$50 000–$150 000 per life-year saved. Quantifying the added value of new technologies, including economic and health effects, versus its incremental cost, is recommended to replace the cost-plus approach in this era of value-based pricing.[4]

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Zika virus in the female genital tract

The first human Zika virus infection was documented in Nigeria in 1954, with very few documented infections after this initial report, until the virus outbreak in 2007 on Yap Island in the western Pacific Ocean. The infection is usually asymptomatic but symptoms can consist of fever, maculopapular rash, arthralgia, and conjunctivitis.

Zika virus infection has been associated with adverse fetal outcomes, including congenital microcephaly, and could lead to pregnancy loss, as was described in a mouse model.[1,2] Presence of Zika virus has been shown in amniotic fluid, which suggests that the virus can cross the placental barrier.[3] Zika virus has been isolated from several other body fluids, including blood, urine, saliva, breastmilk, and semen.[1] Presence of Zika virus in semen was reported after infection and has been shown to persist even after it is undetectable in blood or urine. Sexual transmission has been described in several publications,[1,4]

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