flowing with improved insecticides and drugs to replace those that succumb to resistance, as well as to develop new tools, including safe and effective drugs and vaccines that block malaria transmission. Prospects for malaria eradication may be jeopardized by the apparent recent emergence of artemisinin-resistant falciparum malaria in Southeast Asia.

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A rational approach for the treatment and prevention of neonatal sepsis (Invited Presentation)

43.002

Global Burden of Neonatal Sepsis

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As infant and child mortality declines in many developing countries, neonatal mortality becomes the dominant component of all child mortality, now constituting about 40% of child deaths. As attention is focused on this problem, it is becoming clear that, in the high mortality countries, neonatal mortality rates are being systematically underestimated, especially in the poorest, most marginalized communities. Data on the causes of neonatal deaths in the community are seriously inadequate, as deaths occur outside the health service, and post mortem questionnaires are very difficult to interpret in this age group. Studies that examined the incidence and mortality due to neonatal sepsis were reviewed. We sought to determine the relationship between the neonatal mortality rate and the proportion of neonatal deaths due to infection. From a review of 32 community based studies published since 1990, between 8% and 80% of all neonatal deaths in different regions of the developing world are reported as being due to infectious causes. Similar wide variability is seen in the incidence of clinical neonatal sepsis, with reported rates varying from 49 per 1000 live births in rural Guatemala to as high as 170 per 1000 live birthsin rural India. The field of neonatal mortality, and specifically neonatal sepsis, in developing countries is obscured by a lack of credible data. Neonatal sepsis rates are confounded by lack of clear clinical definitions, and even neonatal mortality rates are very unclear. Without any clear means of determining the cause of community neonatal deaths, the contribution of sepsis to overall mortality is equally unclear. The need for new and innovative research in this field is overwhelming.

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Rational Use of Antibiotics in the Critically Ill Neonate and the Premature Infant

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Strategies to Limit Infections in the Neonate and to Reduce Infection-related Mortality

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Health-care associated infections remain a major problem in the neonatal intensive care unit (NICU), resulting in significant morbidity and mortality. Specifically, bloodstream infections have been associated with adverse neurodevelopmental outcomes among preterm infants with birth weight <1000 grams. In addition, these infections are associated with prolonged duration of hospitalization among survivors and increased cost of neonatal health care. It is clear that preventive strategies are urgently needed.

Many bloodstream infections in the NICU are associated with the use of central venous catheters, and implementation of evidence-based measures as well as bundles has reduced their occurrence. Nevertheless, much work remains. Candidal infections have become more prevalent in the NICU, and fluconazole prophylaxis is being recommended and used to prevent candidiasis among infants with birth weight <1000 grams. Although fluconazole prophylaxis has reduced invasive candidal infections, the underlying risk factors that result in Candida becoming a more common pathogen remain, namely the overuse of antibiotics especially the third generation cephalosporins. In addition, the use of H2 blocker also has contributed to Candidal colonization and late onset sepsis. Recent results of randomized clinical trials have shown beneficial effects of probiotics for prevention of necrotizing enterocolitis and lactoferrin for prevention of late onset sepsis. Finally, the need to vaccinate not only our preemies but also staff and family members of babies in the NICU will further reduce the likelihood of introducing community-associated pathogens into the NICU.

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