COMMENTARY

F Kakkar, MD, MPH, FRCPC²
I Boucoiran, MD, MSc, FRCSC¹

¹ Department of Pediatrics, Faculty of Medicine, Université de Montréal, Montréal, QC

² Department of Obstetrics and Gynecology, Faculty of Medicine, Université de Montréal, Montréal, QC

The Women and Children's Infectious Diseases Center: An integrated approach to congenital infectious diseases

Abstract

Congenital infectious diseases, transmitted during the course of pregnancy, are estimated to affect nearly one in every hundred births worldwide. These infections may be associated with fetal and infant adverse health outcomes, due to congenital malformations caused by in utero transmission of the infectious organism itself (as is the case with cytomegalovirus, toxoplasmosis, syphilis and Zika virus), or due to chronic infection in the infant (as is the case with human immunodeficiency virus [HIV] and hepatitis B and C). In addition, children who are exposed, yet uninfected, may still suffer from the consequences of exposure to infectious pathogens or to the drugs given to treat pregnant women and prevent in utero transmission (as may be the case with HIV infection).

Manuscript submitted 25th November, 2018
Manuscript accepted 2nd December, 2018

Clin Invest Med 2018; 41 (4): E211-E212.

Correspondence to:

Fatima Kakkar, MD, MPH, FRCPC
Department of Pediatrics, Faculty of Medicine,
Université de Montréal, Montréal, QC
E-mail: Fatima.Kakkar@umontreal.ca

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 2 of pregnancy, are estimated to affect nearly one in every
 3 hundred births worldwide. These infections may be associated
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 8 due to chronic infection in the infant (as is the case with
 9 human immunodeficiency virus [HIV] and hepatitis B and C).
 10 In addition, children who are exposed, yet uninfected, may still
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 14 infection).

15 The recently created Women's and Children's Infectious
 16 Diseases Center/Centre d'Infectiologie Mère-Enfant (CIME)
 17 at the Centre hospitalier universitaire Sainte-Justine is the first
 18 center in North America where the care of women with
 19 proven or suspected infections during pregnancy is
 20 coordinated with that of their children. Historically, obstetric
 21 and pediatric care providers have operated in silos, with
 22 separated systems of care for pregnant women and their
 23 children. At the CIME, this care is integrated within a
 24 family-centered approach. The team includes
 25 obstetrician-gynecologists who have sub-specialized in
 26 maternal-fetal medicine, pediatric microbiologists/infectious
 27 diseases specialists, nurses, pharmacists, a social worker, a
 28 psychologist, a nutritionist, occupational and physical
 29 therapists and both clinical and basic science researchers, and
 30 offers coordinated care of women and their children with
 31 suspected or confirmed infections. This integration is essential
 32 to prenatal counselling, where key decisions must be made
 33 using the best available information at hand. Laboratory
 34 testing needs specific expertise and rapid results. The
 35 information can be very complex, given the many uncertainties
 36 surrounding the precise diagnosis of certain infections, the risk
 37 of transmission and the long-term impact of congenital
 38 infection. Integration allows the team to address more
 39 efficiently issues such as guilt, secrecy and deception that can
 40 arise in the situation of congenital infection. Finally, the
 41 opportunity for expectant families to become familiar with the
 42 pediatric team, and to understand the level and type of care
 43 and necessary services that may be needed for their child,
 44 allows for optimal engagement in care.

45 Integration of obstetric and pediatric clinical research
 46 teams is crucial to understanding the pathophysiology behind
 47 these infections, and designing interventions that will allow for
 48 the best possible mother-infant outcomes. This is best

illustrated in the field of HIV, where optimal treatment of 1
 women during pregnancy and their newborn has reduced the 2
 risk of transmission from 25%–30% to less than 1%. 3
 Follow-up of HIV-exposed children has shown potential 4
 effects related to in utero exposure to antiretroviral therapy, 5
 and has resulted in changes to the treatment recommended for 6
 pregnant women. Embedded within the CIME clinical 7
 structure is a research cohort, allowing for the systematic, 8
 long-term follow-up of children with congenital infections or 9
 who have been exposed to infection during pregnancy but were 10
 not infected. 11

Building on its multidisciplinary expertise, the CIME is 12
 establishing itself as a national leader in the field of congenital 13
 infection and as an advocate for the best practices regarding its 14
 screening and management. 15