Attitudes of Canadian Neonatologists in Delivery Room Resuscitation of Newborns at Threshold of Viability

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Abstract

Objective: There is great debate regarding the extent of intensive care interventions for extremely premature newborns. In this report, we describe Canadian neonatologists' attitudes towards delivery room resuscitation decisions in neonates at the threshold of viability.

Methods: We interviewed neonatologists (N = 121) practising in Canadian tertiary care neonatal units between June 2004 and April 2005, and asked whether they would support a parental request not to initiate resuscitation for newborns of 23 to 26 weeks' gestation. Bivariate analyses were performed to identify sociodemographic or cultural factors that might affect resuscitation decisions.

Results: Most Canadian neonatologists would support a parental request not to initiate resuscitation of an infant at 23 and 24 weeks' gestation (98% and 80%, respectively). However, we observed heterogeneity across the country in attitudes primarily at 25 weeks, but also at 24 weeks' gestation. At 24 weeks' gestation, decisions also appear to be significantly related to personal experience with a disabled close friend or relative. For newborns of 25 weeks' gestation, neonatologists are divided: a majority (76%) would strongly advocate resuscitation and/or resuscitate a "viable" fetus against parental wishes, and a minority (24%) would agree not to initiate treatment. At 26 weeks' gestation, more than 97% would not support a request not to initiate resuscitation.

Conclusion: Attitudes of Canadian neonatologists towards resuscitation of newborns at the threshold of viability primarily differ at 25 weeks and to a lesser extent at 24 weeks of gestation. Our findings highlight important nuances in relation to existing national guidelines.

Key Words: Neonatal care, decisions, resuscitation, newborn, premature, extremely low birth weight infant

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Résumé

Objectif : La portée des interventions de soins intensifs offertes aux nouveau-nés extrêmement prématurés suscite de grands débats. Dans le cadre de ce rapport, nous décrivons les attitudes des néonatologistes canadiens envers les décisions liées à la réanimation des nouveau-nés au seuil de la viabilité en salle d'accouchement.

Méthodes : Entre juin 2004 et avril 2005, nous avons interviewé des néonatologistes (N = 121) œuvrant au sein d'unités néonatales de soins tertiaires au Canada et leur avons demandé de nous faire part de la façon dont il traitait les demandes parentales, en ce qui a trait au fait de ne pas entamer des manœuvres de réanimation pour les nouveau-nés issus d'une gestation allant de 23 à 26 semaines. Des analyses bidimensionnelles ont été effectuées pour identifier les facteurs sociodémographiques ou culturels qui pourraient affecter les décisions quant à la réanimation.

Résultats : La plupart de néonatologistes canadiens ont affirmé qu'ils soutiendraient une demande parentale visant à ne pas entamer des manœuvres de réanimation pour les nouveau-nés issus d'une gestation de 23 semaines et de 24 semaines (98 % et 80 %, respectivement). Cependant, nous avons constaté une certaine hétérogénéité des attitudes partout au pays, principalement dans le cas des nouveau-nés issus d'une gestation de 25 semaines, mais également dans celui des nouveau-nés issus d'une gestation de 24 semaines. En ce qui concerne ces derniers, les décisions semblent aussi significativement associées à l'expérience personnelle liée à un ami ou à un proche handicapé. Dans le cas des nouveau-nés issus d'une gestation de 25 semaines, les néonatologistes sont divisés : la majorité d'entre eux (76 %) plaideraient fortement en faveur de la réanimation et/ou réanimeraient un fœtus « viable » à l'encontre des souhaits des parents, et une minorité (24 %) consentiraient à ne pas entamer de traitement. Dans le cas des nouveau-nés issus d'une gestation de 26 semaines, plus de 97 % des néonatologistes ne soutiendraient pas une demande visant à ne pas entamer des manœuvres de réanimation.

Conclusion : Les attitudes des néonatologistes canadiens envers la réanimation des nouveau-nés au seuil de la viabilité divergent principalement dans le cas des nouveau-nés issus d'une gestation de 25 semaines et, dans une moindre mesure, dans celui des nouveau-nés issus d'une gestation de 24 semaines. Nos résultats soulignent les nuances importantes en ce qui a trait aux directives cliniques nationales existantes.

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INTRODUCTION

The process of decision making regarding resuscitation of newborns at the threshold of viability continues to be the subject of intense debate. Medical advances, such as the use of antenatal steroids and surfactant therapy, have resulted in increased survival of extremely premature babies without a comparable improvement in neonatal morbidity.[1] The literature defines the lower limit of viability as between 22 and 24 weeks' gestation.[2,3] Overall, newborns at or below 26 weeks' gestation represent less than 0.2 % of all live births but proportionately carry the greatest burden of long-term disabilities.[4–6] Newborns at or below 24 weeks' gestation generally have less than a 50% chance of intact survival.[4,5]

Despite an explosion of long-term neonatal outcome data to assist physicians in neonatal care decisions,[7] practices in perinatal centres internationally continue to differ markedly for newborns of 22 to 25 weeks' gestation.[8] In 1994, in an effort to guide practice across Canadian tertiary care perinatal centres, the Maternal-Fetal Medicine Committee of the Society of Obstetricians and Gynaecologists of Canada and Fetus and Newborn Committee of the Canadian Paediatric Society jointly published a statement regarding the management of women facing the probable birth of an extremely premature infant.[4] These guidelines (summarized in Table 1) were defined by expert committees and reviewed by physicians involved in the care of these newborns. They were based mostly on available survival and long-term neurological outcome data at the time. There has been no study done to determine whether these guidelines actually reflect practices of Canadian physicians, and these guidelines require updating. In this study, we surveyed Canadian neonatologists' attitudes regarding delivery room resuscitation decisions for newborns at the threshold of viability.

METHODS

Cohort and Data Collection

All neonatologists practising in tertiary care neonatal units in Canada (N = 169) between June 2004 and April 2005 were asked to participate in a telephone interview about attitudes of neonatologists towards delivery room decisions at the threshold of viability. Names were obtained from the Canadian Neonatal Network Database and from telephone communication with all tertiary care neonatal intensive care units in Canada. Interviews were conducted for durations of 20 to 30 minutes, in either English or French. The questionnaire (available on request), developed in our institution, was initially tested with neonatologists from our own institution; no major modifications were made after the pilot test. The questionnaire was sent to Canadian neonatologists in advance of the interview. In the first part of the survey, neonatologists were asked closed-ended questions about social and cultural demographics. The following questions were asked: age, gender, ethnic background (respondents were given a list of options; data are summarized in Table 2), country of medical and neonatal fellowship training (categorized as Canada or other), and number of years of practice as a neonatologist. Respondents were also asked whether they had children, whether they had personal experience with a close friend or relative with a disability (they were asked whether they personally knew anyone with a physical "handicap," who required a wheelchair, crutches, or other physical help, or with a mental "handicap," who required special schooling or care), and the percentage of their work time spent in the practice of neonatology. Involvement in neonatal follow-up, as defined by more than a 50% clinical practice time commitment to follow-up, was determined by contacting the neonatal follow-up clinic directors of each of the tertiary care centres in Canada. In the second part, neonatologists were asked open-ended questions on their attitude towards scenarios in which parents requested withholding resuscitation at birth for a baby at 23, 24, 25, or 26 weeks' gestation (Appendix). The number of weeks of gestation was further detailed as the number of completed weeks (i.e., 23 weeks and 0 days to 23 weeks and 6 days of gestation were all referred to as 23 weeks' gestation) and was based on current gestational age determination standards (first day of last menstrual period if cycle dates were accurate or early ultrasound dating). The study protocol was approved by the University of British Columbia's Behavioural Research Ethics Board and the Children's and Women's Health Centre of British Columbia's Research Ethics Board.

Data Categorization

The responses from each participant (N = 121) to the different scenarios (23, 24, 25, or 26 weeks' gestational age) were independently reviewed and categorized by three investigators (two neonatologists and a research assistant not professionally involved in newborn care) according to the level of constraint applied to respect of a parental request not to initiate intensive care. Data were categorized as *no constraint* (0) if they would agree not to initiate intensive care without reserve, *minimal constraint* (1) if they would agree after ascertaining that the parents were fully informed

ABBREVIATIONS

ANOVA analysis of variance
CPS Canadian Paediatric Society