Archives of Cardiovascular Disease (2019) 112, 365—366

Available online at ScienceDirect www.sciencedirect.com

Elsevier Masson France EM|consulte www.em-consulte.com/en

LETTERS TO THE EDITORS

Response to the letter about the article ''Prognosis of severe congenital heart diseases: Do we overestimate the impact of prenatal diagnosis?''

Réponse à la lettre concernant l'article « Pronostic des cardiopathies congénitales sévères : surestimons-nous l'impact du diagnostic prénatal ? »

Keywords Mortality; Screening; Congenital heart disease; Morbidity; Neurodevelopment
Mots clés Mortalité ; Dépistage ; Cardiopathie congénitale ; Morbidité ; Neuro-développement

We are grateful for the opportunity to respond to the letter by Dr Seguela and colleagues. We appreciate their interest in our study and acknowledge that we expected such a position paper to raise questions among some experts in prenatal diagnosis.

As stated in our paper, no ideal study design has been able to demonstrate, with a relevant level of evidence, a positive effect of prenatal diagnosis on prognosis in the overall spectrum of congenital heart diseases (CHD) [1,2]. Yet, from a public-health perspective, many countries, including France, have actively promoted mass prenatal ultrasound screening since the 1980s, consequently leading to a high level of prenatal diagnosis accuracy, with up to 95% screening rates for some CHD [2]. However, not all countries have followed this policy, arguing that such a time-consuming and expensive healthcare activity, with possibly damaging psychological effects on parents, medicolegal issues for sonographers [3] and increased amniocentesis procedures [4], needed to be counterbalanced by a significantly better prognosis. In the United States, prenatal diagnosis of transposition of the great arteries remains limited to less than one in two newborns [5], despite a supposedly better outcome when neonatal care is anticipated [6], but their survival rates after surgery are excellent [7] and neurodevelopmental issues are taken into consideration [8,9].

Nevertheless, we fully agree with Segela et al. that the most appropriate outcome currently is no longer mortality, considering the high survival rates in paediatric cardiology [2,7]. Furthermore, medical termination of pregnancy in the most complex CHD will long remain the major bias of prognostic studies on prenatal screening [10].

In the modern era, healthcare systems are increasingly constrained by resource allocation, and our community needs to regularly question the efficacy and consequences of each policy. For instance, we may regret that the mass prenatal ultrasound screening actively undertaken in France over the past two decades has reached such a high level of accuracy, without being associated with a similar and systematic screening of neurodevelopmental disorders in children with CHD [8].

Finally, we may probably all agree that prenatal diagnosis of CHD should be more systematically integrated into multicentre prospective clinical research trials, using modern morbidity endpoints, such as patient-related outcomes [11,12], neurodevelopmental status [9,13], and exercise capacity [14,15].

Disclosure of interest

The authors declare that they have no competing interest.

References

[1] Vincenti M, Guillaumont S, Clarivet B, et al. Prognosis of severe congenital heart diseases: do we overestimate the impact of prenatal diagnosis? Arch Cardiovasc Dis 2019;112(4):261—9.
[2] Khoshnood B, Lelong N, Houyel L, et al. Impact of prenatal diagnosis on survival of newborns with four congenital heart defects: a prospective, population-based cohort study in France (the EPICARD Study). BMJ Open 2017;7:e018285.
[3] Ville I, Mirlesse V. Prenatal diagnosis: From policy to practice. Two distinct ways of managing prognostic uncertainty and anticipating disability in Brazil and in France. Soc Sci Med 2015;141:19—26.
[4] Kollmann M, Haeusler M, Haas J, Csapo B, Lang U, Klaritsch P. Procedure-related complications after genetic amniocentesis and chorionic villus sampling. Ultraschall Med 2013;34:345—8.
[5] Escobar-Diaz MC, Freud LR, Bueno A, et al. Prenatal diagnosis of transposition of the great arteries over a 20-year period: improved but imperfect. Ultrasound Obstet Gynecol 2015;45:678—82.
[6] Bonnet D, Coltri A, Butera G, et al. Detection of transposition of the great arteries in fetuses reduces neonatal morbidity and mortality. Circulation 1999;99:916—8.
[7] Spector LG, Menk JS, Knight JH, et al. Trends in long-term mortality after congenital heart surgery. J Am Coll Cardiol 2018;71:2434—46.

DOIs of original articles: https://doi.org/10.1016/j.acvd.2019.03.002, https://doi.org/10.1016/j.acvd.2018.11.013.

[8] Marino BS, Lipkin PH, Newburger JW, et al. Neurodevelopmental outcomes in children with congenital heart disease: evaluation and management: a scientific statement from the American Heart Association. Circulation 2012;126:1143—72.
[9] Calderon J, Bellinger DC, Hartigan C, et al. Improving neurodevelopmental outcomes in children with congenital heart disease: protocol for a randomised controlled trial of working memory training. BMJ Open 2019;9:e023304.
[10] Garne E, Khoshnood B, Loane M, Boyd P, Dolk H, Group EW. Termination of pregnancy for fetal anomaly after 23 weeks of gestation: a European register-based study. BJOG 2010;117:660—6.
[11] Amedro P, Dorka R, Moniotte S, et al. Quality of life of children with congenital heart diseases: a multicenter controlled cross-sectional study. Pediatr Cardiol 2015;36:1588—601.
[12] Amedro P, Bajolle F, Bertet H, et al. Quality of life in children participating in a non-selective INR self-monitoring VKA-education programme. Arch Cardiovasc Dis 2018;111:180—8.
[13] Marelli A, Miller SP, Marino BS, Jefferson AL, Newburger JW. Brain in congenital heart disease across the lifespan: the cumulative burden of injury. Circulation 2016;133:1951—62.
[14] Amedro P, Gavotto A, Guillaumont S, et al. Cardiopulmonary fitness in children with congenital heart diseases versus healthy children. Heart 2018;104:1026—36.
[15] Amedro P, Gavotto A, Legendre A, et al. Impact of a centre and home-based cardiac rehabilitation program on the quality of life of teenagers and young adults with congenital heart disease: the QUALI-REHAB study rationale, design and methods. Int J Cardiol 2019;283:112—8.

Pascal Amedro[a,b,*], Marie Vincenti[a,b]
[a] *Paediatric and Congenital Cardiology Department, M3C Regional Reference CHD Centre, University Hospital, Montpellier, France*
[b] *PhyMedExp, CNRS, INSERM, University of Montpellier, Montpellier, France*

[*] Corresponding author. Paediatric and Congenital Cardiology Department, Montpellier University Hospital, 371, avenue du Doyen-Giraud, 34295 Montpellier, France.
E-mail address: p-amedro@chu-montpellier.fr (P. Amedro)

Received 1st April 2019;
accepted 1st April 2019
Available online 11 April 2019

https://doi.org/10.1016/j.acvd.2019.04.001