



**HAL**  
open science

## Reply

B. Chauveau, C. Auclair, A. Legrand, R. Mangione, Laurent Gerbaud, F. Vendittelli, L. Boyer, D. Lémery

► **To cite this version:**

B. Chauveau, C. Auclair, A. Legrand, R. Mangione, Laurent Gerbaud, et al.. Reply. *Ultrasound in Obstetrics and Gynecology = Ultrasound in Obstetrics & Gynecology*, 2019, 53 (2), pp.276-277. 10.1002/uog.20164 . hal-03049060

**HAL Id: hal-03049060**

**<https://uca.hal.science/hal-03049060>**

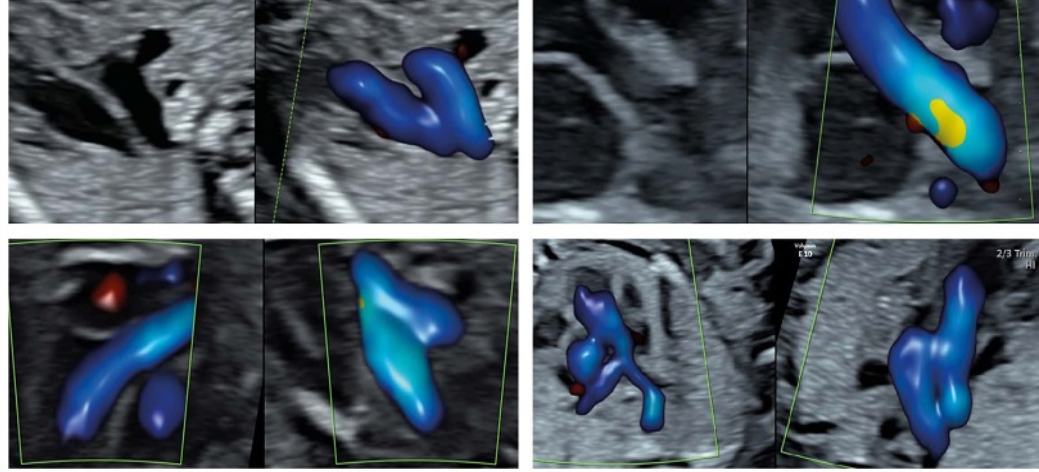
Submitted on 9 Dec 2020

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Copyright

# ISUOG Education 2020



## Cardiac advanced online series

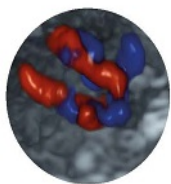
**Course chair:** Dr. Simon Meagher (Australia)

**Faculty:** Prof. Dario Paladini (Italy), Prof. Julene Carvalho (UK)

**09:00 GMT • 10:00 CEST • 18:00 AEST**

Register for all 3 courses to attend, watch and learn from the best.

**Register now ▶**



### Malformation of the Fetal Semilunar Valves

**12 September 2020**




### Override Anomalies (Conotruncal part 1)

**14 November 2020**



### Transposition of the great arteries (Conotruncal part 2)

**12 December 2020**

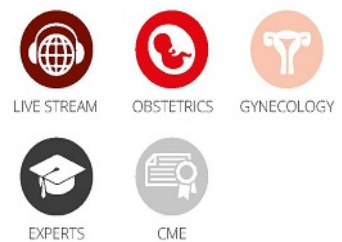


**Our previous delegates said:**

*"Very relevant to clinical practice"*

*"Great course, especially the fact that it was live streamed"*

Type	Fees	
	ISUOG Member	ISUOG Non-member
General	£150	£205*
Sonographer & Trainee	£100	£115*
Middle income countries	£50	£65*
Low resource countries	£25	£40*



\*Fees for non-members include ISUOG basic membership for one year, starting from the time of the course.

Visit our website to register and find out more  
[education@isuog.org](mailto:education@isuog.org) | +44 (0)20 7471 9955



from those of the entire group of 114 practitioners. Each of the 20 duplicate trios was inserted randomly into the sequence of reading, but avoiding insertion immediately before or after its duplicate. When one of these trios was presented for the second time it was considered only as a 'kappa trio' and not used for analysis.

Regarding the kappa coefficient threshold, it has been documented previously in a review that reliability of sonographic measurements in obstetrics and gynecology is quite low<sup>2</sup>. These authors demonstrated that most studies examining reliability overrated the true reproducibility, emphasizing that most such studies were performed by experts in academic centers, so the results may have been better than would be observed usually. In our study, a national sample was collected with no selection or exclusion with respect to the type of center or its experience; therefore, our reliability potentially reflects 'true' reproducibility in daily clinical practice.

To avoid any confusion, we would like to point out that, to address the main objective of the study (i.e. to evaluate how image construction, taking into account different ultrasound propagation velocities, can influence the intrinsic quality of an image), each velocity was compared with the others in terms of grade of image quality. In addition, as described in the methods section regarding our study's secondary objectives, it should be borne in mind that the purpose of selecting the most acceptable images was to facilitate the process of determining which was best – the conventional velocity (1540 m/s) or lower velocities (1420 m/s and 1480 m/s, assessed together), taking into account the anatomical conditions of the abdominal wall (subset analysis).

Regarding the sample size: as we highlighted in our paper, this was an original study, with no previous study investigating the influence of ultrasound propagation velocity setting in optimizing sonographic imaging in obese women; thus, we were unable to evaluate *a priori* the percentage of high-quality images needed for each propagation velocity setting. Further investigations are necessary to confirm our work. This was a preliminary study, not a confirmatory one. Moreover, we considered only four planes, chosen since they differ substantially in terms of contrast and grayscale and are particularly difficult to obtain in obese women. Other conventional planes of mid-trimester fetal ultrasound should also be assessed, in order to validate the results.

We thank Dr Brian for his constructive comments, which have given us the opportunity to clarify the methodological approach that we used.

B. Chauveau<sup>1,2</sup>, C. Auclair<sup>1,3</sup>, A. Legrand<sup>1,4</sup>,  
R. Mangione<sup>5</sup>, L. Gerbaud<sup>1,3</sup>, F. Vendittelli<sup>1,4</sup>,  
L. Boyer<sup>1,2</sup> and D. Lémery<sup>1,4\*</sup>

<sup>1</sup>Université Clermont Auvergne, Institut Pascal,  
Clermont-Ferrand, France;

---

## Reply

We thank Dr Brian for his perceptive questions on the statistical approach of our work<sup>1</sup>. In response, we would like to highlight some facts regarding our methodology.

All our results were obtained from the rating of 80 trios of images, by each of 114 practitioners. The rating of each image within each trio was independent of the other two, since they were constructed on the basis of three different assumptions regarding propagation velocity. In order to determine whether the practitioners' analysis of each image was consistent, we assessed within-rater variability using a subset of 20 trios of images, which were graded a second time by each practitioner. We identified the 35 raters whose intrarater kappa coefficient was higher than 0.5 and confirmed that their findings did not differ

<sup>2</sup>Pôle Radiologie,  
Centre Hospitalier Universitaire Gabriel Montpied,  
Clermont-Ferrand, France;

<sup>3</sup>Service de Santé Publique,  
Centre Hospitalier Universitaire de Clermont-Ferrand,  
Clermont-Ferrand, France;

<sup>4</sup>Pôle Femme Et Enfant, Hôpital Estaing,  
Centre Hospitalier Universitaire de Clermont-Ferrand,  
1 Place L&R Aubrac, 63003,  
Clermont-Ferrand Cedex 1, France;

<sup>5</sup>Collège Français d'Echographie Foetale (CFEF), France  
\*Correspondence.  
(e-mail: dlemery@chu-clermontferrand.fr)

DOI: 10.1002/uog.20164

## References

1. Chauveau B, Auclair C, Legrand A, Mangione R, Gerbaud L, Vendittelli F, Boyer L, Lemery D. Improving image quality of mid-trimester fetal sonography in obese women: role of ultrasound propagation velocity. *Ultrasound Obstet Gynecol* 2018; **52**: 769–775.
2. Coelho Neto MA, Roncato P, Nastri CO, Martins WP. True Reproducibility of UltraSound Techniques (TRUST): systematic review of reliability studies in obstetrics and gynecology. *Ultrasound Obstet Gynecol* 2015; **46**: 14–20.