Editorial Comment

Stepping through a new door in La Porte IN

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In this issue of the Journal of Geriatric Cardiology, Yang et al.1 studied the effects of arotinolol, a beta-blocker (BB), on the right ventricular (RV) function. (1) In the past, most studies were focusing on the left ventricle (LV) because the RV was considered only a passive conduit. (2) This study follows a new path in searching for a comprehensive understanding of RV function with possible pro-active and aggressive interventions in RV dysfunction and failure.

In general, the study by Yang et al. was well designed and methodically conducted. The inclusion criteria were rigid in order to insure that only patients with possible global (both RV and LV) cardiomyopathy were selected. The reason is that the patients with myopathic process involving unevenly the RV and LV such as restrictive cardiomyopathy, ischemic cardiomyopathy, diabetic cardiomyopathy etc could confound the data and murky the results. The state-of-the-art imaging techniques accurately highlighted the minimal changes in size and ejection fraction (EF) of the RV. However, as new concerns were recently circulated on the scientific and lay press about sloppy methodology and statistical analysis in scientific research, there are a few issues in this paper of Yang et al. that could be improved in future studies.2-4 Because this was a pioneering pilot trial, the number of patients was (expected to be) small, so the results could not be extrapolated to the general population. Because of its low number of female and elderly subjects, this present study could not accurately and reliably (without being politically incorrect) predict how well the drug will affect women who also compose the majority of the geriatric population. Even so, although the results are preliminary, they are very promising. They stimulate creative thinking and generate provocative ideas for future studies:

(1) Even there are beat-to-beat differences in stroke volume, the overall cardiac output between the RV and LV should be equal. The LV cardiac output could never be higher than the cardiac output of the RV, unless there is a right to left shunt. Then in this study, the betablocking effect is evidenced by a smaller LV and RV size (negative remodeling) and an increase of EF (positive inotropic effect). Which component is more clinically important and prognostically significant? Could a patient achieve clinical improvement with only one positive component of the above equation? Could a ventricle stay at the same size (at least without being dilated) while the EF increases (only positive inotropic effect)? Does the EF have to be increased in order to keep the same stroke volume if the RV or LV decreases its size?

(2) Once there is RV dysfunction and failure, besides a positive effect from BB, what is the effect of nesiritide and statin? If the patient has LV dysfunction and pulmonary hypertension, what is the effect of arotinolol or any BB? If the patient has only isolated RV failure and pulmonary hypertension, what is the effect of BB, angiotensin converting enzyme inhibition (ACEI), angiotensin receptor blockade (ARB)? Is it a class effect or the effect of arotinol alone? ..... In conclusion, although more clinical studies are needed in the future, this pioneering work by Yang et al. certainly is a notable advancement in the field of cardiology. It opens new door, everywhere and especially in La Porte IN (La Porte is the French word meaning the door, the name given by the early French settlers to the area leading to the fertile land of the Midwest after their long trek through the mountains from the east coast. La Porte county, Indiana is home of the senior author of this editorial). 

References


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