This is a thoughtful retrospect observational study by Sang-Mee An et al (1) from Ulsan University, COM, Seoul, ROK in this issue assessing effect of preop LVEF in patients with RHD undergoing double valve replacement. They present 146 pts with LVEF >50% and <50% with mixed valve pathologies out of total 201 undergoing DVR with a median follow up 3.2 years (1.3-4.7 yrs.) post op. Both groups had similar profile except for more males and more aortic insufficiency in the low EF group. 2D echocardiography was carried out preop in all and in 130 within 4-5 days post op followed by echocardiography in all for rest of the study period, an average of 5 studies per patient. Pre op, those with EF <50, had larger LVs, LVESD 49 mm vs 32 mm in EF>50, were more males and with more prevalent aortic insufficiency. They report that immediate post EF improved in both groups (average EF 43% in low group, 59% in higher group) but change in LVESD (-5.8%) was more pronounced in lower EF group, expectedly since most of these patients had aortic insufficiency. The incidence of mitral stenosis was same in both groups. The improvement in EF was sustained in group with pre op LVEF >50 where it plateaued after 3-4 years but started to decline in patients with EF <50% with parallel linear increase in LVESD as well. There were 17 deaths in both groups during follow up period with no statistical difference between the two but observed survival was slightly better in the preserved ventricle group. The study is limited due to smaller cohort, shorter length of follow up and no concrete conclusion can be drawn. It seems that AI and ventricular dilation play some role in the outcomes regardless of mitral valve pathology, type of prostheses used or surgical technique whether all sub-valvular apparatus /chordal structures were preserved or not. Although the scope of this study was limited and role of myocardial involvement by rheumatic process affecting EF is not studied here, rheumatic myocarditis has lingering effects on the cardiac muscle. Ying-Shuing Lee and Ching-Ping Lee (Taipei, Taiwan) (2), studied ultrastructural changes in patients with isolated rheumatic mitral stenosis with normal and abnormal LVEF and found that the patients with low EF always exhibited more extensive loss of myofibrils resulting from either a disproportion of the mitochondria-to- myofibril ratio or myofibrillar degeneration. This was related to the extent of myocardial involvement by the rheumatic process rather than being structural adaptation in response to the hemodynamic derangement. In other words, in a patient with treated mitral stenosis and low EF, there is no guarantee there will be no further deterioration in the LV function long term.

With its described limitations, present study still is an important contribution suggesting that earlier surgical intervention could preserve long term left ventricular function and may affect functional status, reduce disability and perhaps prolong life in patients afflicted with rheumatic heart disease.

The estimated global burden of rheumatic heart disease in 2012 was 15.6-19.6 million cases and 5.2 million disability years associated with rheumatic heart disease (3). A study published in NEJM in 2017 (4) estimated 33.4 million case of rheumatic heart disease and 10.5 million disability adjusted life years due to it in the world, which is an increase, most all of those in the developing world. In recent years, the mortality for RHD has decreased by 47.8% from period 1990-2015. This may partly be due to spreading technology such as percutaneous transcatheter mitral commissurotomy (PTMC) in patents with isolated mitral stenosis, work being done to increase availability of cardiac care in certain parts of the world as in Sub-Saharan Africa (5) and to some extent reduced poverty in some regions of the world. Studies like this one are possible from a developed country such as Republic of Korea but not from most of endemic areas. It

would be a great contribution to continue this and such other studies to understand the impact of early interventions. Unfortunately, there still is poverty, lack of simple diagnostic tool to detect strep infections, treat those, prevent rheumatic fever and then prevent RHD much less mitigate the sequalae.

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