

of systolic RV function including Fractional Area Change (FAC%), tricuspid annular plane systolic excursion (TAPSE) and Tissue Doppler velocity (TDI) of tricuspid annulus. The aim of our study was to compare the conventional 2-D echocardiographic parameters of RV systolic function with CMR derived RVEF and stroke volume (SV). The echo and cardiac magnetic parameters to assess the right ventricular function are different. Consecutive patients referred to CMR for RV assessment from January 2011 to December 2014 were screened. 69 patients with CMR and adequate echo were selected. 20 subjects with normal CMR were enrolled as a control group. Quantitative 2-D echo measures were compared with CMR RVEF (%) and SV (ml). The comparison was made using linear correlation for the echo variables with CMR variables. The mean age of patients was 38.2 ± 5.4 (51% females) were enrolled. 84.1% of patients had normal RVEF by CMR. In patients, FAC% but not TAPSE or annular TDI, correlated with CMR derived RVEF ($R = 0.45$, $p = 0.0001$) with fair agreement ($\kappa = 0.43$). However, FAC% did not correlate with CMR RV stroke volume. In contrast, in normal subjects, TAPSE had the best correlation with CMR derived RVEF ($R = 0.67$, $p = 0.0001$). In patients, CMR reclassified RV function assessed by FAC% in 11 (16%). 6 (8%) patients who had abnormal RV function by FAC% were reclassified as normal while 5 (7%) with normal RV function by FAC% were reclassified as abnormal. In normal subjects, however, only one with abnormal RV function by TAPSE was reclassified as normal by CMR. The current quantitative 2-D echo parameters of RV systolic function assessment correlate poorly with CMR measured RVEF and SV and behave differently in comparison with CMR in patients with normal and abnormal RV function. CMR should be utilized more often to measure RVEF and volumes to complement routine 2-D echocardiography measurements for comprehensive and accurate evaluation of RV systolic function.

<http://dx.doi:10.1016/j.jsha.2016.04.023>

23. Epidemiological aspects and clinical outcomes of mitral valve prolapse in Saudi adults over a 10 year period

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Mitral valve prolapse (MVP) is a well recognized clinical entity that is associated with significant morbidity. Epidemiology, echocardiographic (echo) characteristics and clinical outcome of MVP in Saudi Arabia have not been studied. To determine the prevalence, echo features

and clinical outcome of MVP among the adult Saudi patients who underwent echo evaluation over a 10-year period. Retrospective review of consecutive cases of MVP or any of its components as diagnosed by echocardiogram. Study was conducted in King Abdulaziz Cardiac Center, Riyadh and included 121,419 adult echo studies done between January 2003 and December 2012. Study population consisted of 77,176 patients after removing duplicate studies. Echo parameters for all Saudi nationals ≥ 14 y of age were collected from the Xcelera database. Mitral valve disease due to non-myxomatous prolapse were excluded. Among the study population ($n = 77,176$) 600 patients were labeled as having MVP or any of its echo features (0.7%). Mean age was 64 years and 62% were males. Majority of patients (54.4%) had mild MVP, while moderate and severe prolapse were present in 21.1% and 24.5% respectively. Severe mitral regurgitation was present in 16.5% and chordal rupture was noted in 9%. Left ventricular size was moderately dilated in 7.6% and severely dilated in 1.3%. Prevalence of MVP in Saudi nationals at a referral cardiac center is less than the reported international figure of 1-3%. In contrary to published literature MVP in Saudi population seems to be more common in males and seems to be diagnosed at a later age.

<http://dx.doi:10.1016/j.jsha.2016.04.024>

24. Psycho-social impact of prosthetic heart valves on young Saudi females

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Background: Many patients with prosthetic heart valves (PHV) in Saudi Arabia fall at young age. Females in the reproductive age may encounter a significant amount of emotional stress due to struggling between own health, natural desires, husbands demands and societal expectations. Different types of PHV may impose variable degrees of psychological disturbances and family disruptions.

Objectives: The aim of this study is to evaluate presence and magnitude of psycho-social effects of PHVs in young Saudi females.

Methods: Seventy-five Saudi females with PHV (18–50 y) and their age and marital status-matched controls were included in the study. Self-administered questionnaire, that includes short-form Depression, Anxiety, and Stress Scale (DASS) was used to obtain data.

Results: Mechanical valve (MV) group ($n = 49$) were 6.5 y older ($P = 0.001$), more illiterate ($p < 0.001$) and less employed ($p = 0.031$) than biological valve (BV) group. Mean marital duration was 22.6 y in MV group and

12.6 y in BV group ($p < 0.001$). Depression was least frequently observed in the MV group ($P = 0.022$), while a trend of higher DASS domains was observed in the BV group ($p = \text{NS}$). Predictors of lower depression rate include; living outside Riyadh city, lower level of education, being unemployed and having a supportive husband.

Conclusion: Patients with MV have the most stable psychological status, probably as a result of stronger spousal relationship. Recommendation: Counselling husbands may strengthen spousal relationship and improve psychological wellbeing of patients with PHV.

<http://dx.doi:10.1016/j.jsha.2016.04.025>

25. Novel adipokine tazarotene induced gene 2 correlations with increased cardiovascular risk determined by body composition, insulin resistance, dyslipidemia and diabetes in Saudi women

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Tazarotene induced gene 2 (TIG2) is a novel adipokine that is believed to be a mediator for the adipose tissue inflammation that occurs in obesity. The present study compared TIG2 levels between healthy and type 2 diabetic women matched for age and body composition. We also aimed to assess the relationship of serum TIG2 levels with body composition, insulin resistance, dyslipidemia and diabetes in Saudi adult women. This observation case-control study was conducted at the Departments of Physiology and Medicine, Saud University Riyadh, Saudi Arabia, from September 2013 to April 2014. A total of 100 subjects were recruited, including 51 adult diabetic females, and a control group consisting of 49 healthy females. Finally 80 subjects were selected as per inclusion criteria. In the finally selected group, 45 of were diabetics and 35 were healthy subjects matched for age, BMI and body composition with age ranging between 30 and 65 years. Body composition analysis was estimated using Bioelectrical impedance analyzer. Fasting 10 ml venous blood samples were analyzed for glycemic markers, lipids and TIG2. Insulin resistance indexes were calculated by homeostasis model assessment of insulin resistance (HOMA-IR) and quantitative insulin sensitivity check index (QUICKI) using standard formulas. The two groups were matched for age, BMI, body fat percentage (BF%), basal metabolic rate (BMR), truncal fat and WHR. Serum TIG2 levels were higher in diabetics than controls (256.09 μm 57.01 vs 305.63 μm 73.66, $p = 0.001$). Systolic blood pressure ($p = 0.001$), weight ($p = 0.040$), fat mass ($p = 0.045$) and visceral fat ($p = 0.025$) were found to be significantly

higher in diabetics when compared to controls. FBS, HBA1C, LDL, TG, insulin, HOMA-IR, QUICKIE and TIG2 were significantly higher and HDL was significantly lower in diabetics compared to controls. In Spearman's correlation analysis. TIG2 correlated positively with age ($r = 0.300$, $p = 0.007$), WHR ($r = 0.250$, $p = 0.026$), weight ($r = 0.270$, $p = 0.016$), BMI ($r = 0.364$, $p = 0.003$), BF% ($r = 0.325$, $p = 0.003$), fat mass ($r = 0.250$, $p = 0.026$), Visceral fat ($r = 0.356$, $p = 0.001$) and truncal fat mass ($r = 0.249$, $p = 0.027$), serum basal insulin ($r = 0.354$, $p = 0.001$) and HOMA IR ($r = 0.275$, $p = 0.015$), while it correlated inversely with QUICKI ($r = 0.283$, $p = 0.012$). In multiple linear regression analysis body age ($r = 0.236$, $p = 0.023$), BF% ($r = 0.265$, $p = 0.014$) and basal insulin ($r = 0.265$, $p = 0.014$) levels were independent predictors of TIG2. Serum TIG2 levels are elevated in patients with type 2 DM compared to healthy control subjects and are positively correlated with adiposity and insulin resistance in Saudi adult women with type 2 DM. Our study indicates that the determination of body fat may have a key role in prediction and detection of the increased cardiometabolic risk in Type 2 DM.

<http://dx.doi:10.1016/j.jsha.2016.04.026>

Award lecture AL FAGIH PRIZE SESSION

26. Cardiovascular risk assessment for Saudi university employees and their families: developing a framework for provision of an evidence-based cardiovascular disease preventative programme.

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In the Kingdom of Saudi Arabia (KSA), cardiovascular diseases (CVDs) are the primary cause of death among adults, representing 46% of total mortality in 2014. This study's objectives were to assess the prevalence of cardiovascular risk factors (CVRFs), and calculate the cardiovascular risk (CVR) among King Saud University employees and their families. Moreover, it aimed at assessing the possible effects of living in KSA on the heart health of expatriate employees and their families. A cross-sectional study was conducted on 4500 university employees and their families aged ≥ 18 years old, using the World Health Organization STEPwise approach to surveillance of CVRFs. CVR was then calculated for participants using the Framingham Coronary Heart Risk Score calculator. The mean age of participants was 39.3 ± 13.4 years. The prevalence of CVRFs was as follows: low fruit/vegetable consumption of < 5 portions/day