In chronologic order:

1. **EF/WMSI/GLS/FORCE in Syntax/Gensini prediction during DSE**

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**Abstract Preview**

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Associate Professor Karina Wierzbowska-Drabik (EUD ID: 109483)
Szpital im. W.Biega-Skrego (Med.Univ.of Lodz)
Klinika Kardiologii (Dept. Of Cardiology)
Ul. Kniaziewicza 1/5
91-347 · Lodz Poland
Phone: +48 42 653 9909 · Fax: +48 42 653 9909
Email: wierzbowska@ptkardio.pl

**Title:** The value of peak ejection fraction, wall motion score index, global longitudinal strain and force to predict coronary angiographic SYNTAX and GENSINI score during dobutamine stress echocardiography

**Topic:**
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**Category:** General

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K. Wierzbowska-Drabik1, E. Picano2, M. Simiera1, M. Piewka1, R. Krecki1, J.Z. Peruca1, J.D. Kasprzak1 · (1) Medical University, Lodz, Poland (2) Institute of Clinical Physiology, CNR, Piso, Italy

**Objectives:** Our aim was to assess the relative value of different indices of left ventricular (LV) function during dobutamine stress echocardiography (DSE) in predicting the underlying coronary atherosclerotic burden expressed as SYNTAX and GENSINI score.

**Background:** The prognostically validated angiographic SYNTAX as well as GENSINI scores quantify coronary artery disease (CAD) atherosclerotic burden. The prediction of the extent and severity of CAD may be possible during DSE with various indices of LV function such as: wall motion score index (WMSI), ejection fraction (EF), force, and peak systolic global longitudinal strain (GLS).

**Methods:** We prospectively enrolled 223 patients (120 male; mean age 62±9 years) evaluated with DSE for known or suspected CAD. LV function was assessed with 4 different indices at rest and peak stress: 1 - WMSI (16-segment model); 2 - EF (with triplane method to calculate end-diastolic volume, EDV, and end-systolic volume, ESV); 3 - LV Force, calculated as the ratio between systolic blood pressure (SBP) and ESV; 4 - GLS. All patients underwent coronary angiography within 12 weeks of DSE. SYNTAX and GENSINI were assessed by two invasive cardiologists blinded to DSE results.

**Results:** The technical success rate for evaluation at peak DSE was 100% for WMSI, 92% for EF and Force and 100% for GLS. SYNTAX and GENSINI were strongly correlated (r = 0.962, p < 0.0001). The correlation for SYNTAX was highest with peak WMSI (r = 0.461, p < 0.0001), intermediate with peak force (r = 0.262, p < 0.0001), see Figure, slightly lower for GLS (r = 0.235, p = 0.0004) and lowest for EF (r = 0.135, p = ns).
Conclusions: The assessment of global and regional LV function during DSE provides insight on CAD anatomic severity. Established parameters such as EF or more advanced indices as GLS perform less well for this purpose than WMSI or LV Force.

Figure caption: SYNTAX score versus WMSI and Force measured at peak DSE.