Myocardial toxins - Metabolic heart disease

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1. Epidemiology of CVD in DM/obesity

Epidemiology of DM, obesity and pre-diabetes
CHF in diabetes vs diabetes in CHF
"The Perfect Storm"? - Diabesity, HF and outcome

2. Pathophysiology of heart failure in diabesity

Definition of diabetic heart disease - "Myocardial disease in diabetic subjects that cannot be ascribed to hypertension, coronary artery disease or any other cardiac disease"
The "Diabesity" Spectrum

3. Mechanisms of diabetic heart disease

HF vs other CV disease in DM
Protein glycation
Structural changes – Fibrosis and apoptosis
Myocardial energetics - MR spectroscopy and PET
Microvascular disease
Cardiac autonomic neuropathy
Coronary perfusion reserve in diabetic subjects

4. Presentations of diabetic heart disease

Subclinical and clinical HF
Significance of impaired exercise capacity
Independent patterns of LV dysfunction - diastolic *and* systolic
Subclinical LVD - Myocardial rotation and torsion

5. Screening for preclinical disease

The perils of disease screening
Requirements of screening
Screening targets in DM/MS

6. Preventive steps

Prevention – diet, exercise
General recommendations – BP control, HRE
Specific therapy – ACEI, Bbl
Specific options

- Glycemic control, insulin resistance
- Aldo blockade
- Statins
- Cross-link breakers
- SGLT2i
- Exercise training

7. Conclusions

Metabolic cardiomyopathy exists, is common, easily identified by echo
Numerous potential causes or contributors
Potential therapies include; Lifestyle intervention, improved control, insulin/insulin sensitizers, SGLT2i; ACEI, ARBs, cross-link breakers
But the fundamental need is an "upstream" intervention