CONCLUSIONS
The age of onset of aortic dissection of female patients older than men, sudden chest pain symptoms women is obvious than men, while symptoms of irritable male more common. Aortic intramural hematoma is more common in women. Suffering from acute type AAD women patients have higher operative mortality.

GW26-e4000
Kv4.3 Expression Improves Cardiac Contraction Without Inhibition of Relaxation in Heart Failure
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OBJECTIVES
To test whether expression of Kv4.3 in HF ventricular myocytes would improve cardiac contraction without affecting relaxation. We have tested whether expression of the Kv4.3 channel altered CaMKII.

METHODS
HF was generated in mice by thoracic aortic binding and Kv4.3 was expressed in HF ventricular myocytes by left ventricular adenoviral injection with Ad-Kv4.3 (Ad-β-gal injection was used as control). [Ca²⁺]i and sarcomere length were measured by IonOptix Ca²⁺ image system. Myofilament sensitivity to Ca²⁺ was assessed by measuring the gradient of cell length-fur2 trajectory during contraction and late relaxation.

RESULTS
HF ventricular myocytes with Kv4.3 expression presented a significant increase in fractional shortening and Ca²⁺ transient with a reduction in diastolic Sr Ca²⁺ leak, and a recovery of frequency-dependent acceleration of relaxation (FDR), an intrinsic mechanism allowing faster ventricular relaxation and diastolic filling at fast heart rates. In contrast to KN93, a pharmacological CaMKII inhibitor, Kv4.3 expression did not affect myofilament sensitivity to Ca²⁺, assessed by the changes of length-fur2 trajectory gradients. In line with this, a phospho-Ser-antibody showed that unlike KN93, which significantly reduced phosphorylation in the Tn-I that co-immunoprecipitated with CaMKII, Kv4.3 expression did not alter Tn-I phosphorylation. In vivo study showed that Kv4.3 expression increased EF from 45 ± 1% in HF mice transfected with Ad-β-gal (n=11) to 73 ± 2% in mice transfected with Ad-Kv4.3 (n=10, p<0.05), while the E/E' ratio was unchanged (39 ± 2 vs. 35 ± 2, p>0.05).

CONCLUSIONS
Our results suggest that Kv4.3 expression improves myocardial contraction without detrimental effect on cardiac relaxation. Instead, it recovers FDR.

GW26-e4022
SRY Gene Transferred by Extracellular Vesicles Accelerates Atherosclerosis by Promotion of Leukocyte Adherence to Endothelial Cells
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OBJECTIVES
Extracellular vesicles (EVs) participate in important biological processes, including horizontal transfer of borne molecules among neighboring cells. Our previous study showed the existence of SRY RNA in EVs that have the ability to influence the function of recipient cells by increasing RNA-coding mRNA and protein levels. SRY (sex determining region, Y), a gene in the Y chromosome responsible for increasing expression of angiotensin II and noradrenaline, is associated with risk of coronary artery disease (CAD) in men. We hypothesize that SRY RNAs in plasma EVs is involved in the pathogenesis of atherosclerosis by the transfer of SRY RNA to recipient cells, e.g., leukocytes and endothelial cells, and increased adherence of leukocytes to endothelial cells.

METHODS
PCR and gene sequencing found SRY gene fragment in plasma EVs from male but not from female patients; EVs from male patients with coronary artery disease (CAD) had higher SRY gene copy number (GCN) than healthy subjects.

RESULTS
Additional studies found that leukocytes, the major source of plasma EVs, had higher SRY GCN and mRNA and protein expression in male CAD patients than controls. After incubation with EVs from SRY-transfected HEK293 cells, monocytes (THP-1) and endothelial cells (HUVECs), which do not endogenously express SRY protein, were found to express newly-synthesized SRY protein. This resulted in an increase in adherence factors, CD11a in THP-1 cells and ICAM-1 in HUVECs. Electrophoretic mobility shift assay showed that SRY protein increased the promoter activity of CD11a in THP-1 cells and ICAM-1 in HUVECs. There was an increase in THP-1 cells adherent to HUVECs after incubation with SRY-EVs. SRY RNAs transferred from EVs have pathophysiological significance in vivo; injection of SRY EVs to ApoE/− mice accelerated atherosclerosis.

CONCLUSIONS
The SRY gene in plasma EVs transferred to vascular endothelial cells may play an important role in the pathogenesis of atherosclerosis; this mechanism provides a new approach to the understanding of inheritable CAD in men.

GW26-e1814
Role of Monocyte/Macrophage in TRPV1 Ablation-Induced Renal Injury in Salt-Sensitive Hypertension
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OBJECTIVES
Our studies show that deletion of the transient receptor potential vanilloid type 1 (TRPV1) gene aggravates deoxytocicosterone acetate (DOCA)-salt hypertension-induced renal injury, which is associated with increased renal monocyte chemoattractant protein-1 (MCP-1) production and monocyte/macrophage infiltration. The results suggest that TRPV1 ablation-induced aggravation of renal injury in DOCA-salt hypertension may be the result of enhanced renal monocyte/macrophage infiltration that is dependent of the MCP-1/C-C chemokine receptor 2 (CCR2) signaling pathway. Therefore, we hypothesized that MCP-1/CCR2-mediated monocyte/macrophage infiltration is a critical determinant of TRPV1 ablation-induced renal injury in salt-sensitive hypertension.

METHODS
We induced salt-sensitive hypertension for 4 weeks by uninephrectomy and DOCA-salt in wild type (WT) and TRPV1-null mutant (TRPV1−/−) mice with or without RS504393, a selective CCR2 antagonist.

RESULTS
DOCA-salt treatment increased systolic blood pressure (SBP) to the same degree in both strains, but increased urinary excretion of albumin and 8-isoprostane and decreased creatinine clearance with greater magnitude in TRPV1−/− mice compared to WT mice (0.93±5.2 vs. 26.5±3.4 µg/mg creatinine, 4.2±0.4 vs. 5.1±0.21 ng/24h; 98±19 vs. 488±14 µl/mg creatinine, P<0.05). DOCA-salt treatment also caused renal glomerulosclerosis, tubulointerstitial injury, collagen deposition, monocyte/macrophage infiltration, proinflammatory cytokine and chemokine production, and NF-κB activation in greater degree in TRPV1−/− mice compared to WT mice (glomerulosclerosis index: 0.78±0.15 vs. 0.35±0.14; tubulointerstitial injury score: 3.37±1.0 vs. 2.01±0.49; collagen content: 21.8±2.3 vs. 13.8±2.4 µg/mg dry tissue; monocyte/macrophage infiltration: 74.4±4 vs. 42.5±5 cells/mm²; TNF-α: 1.03±0.22 vs. 0.76±0.21 pg/mg protein; MCP-1: 10.35±1.19 vs. 6.24±0.64 pg/mg protein; p65-NF-κB: protein: 54.5±3.8 vs. 36.3±3.9 mg/mg protein, P<0.05). Blockade of the CCR2 with RS504393 (4 mg/kg) had no effect on SBP in DOCA-salt-treated WT or TRPV1−/− mice compared to their respective controls. However, treatment with RS504393 ameliorated renal dysfunction and morphological damage, and prevented the increase in monocyte/macrophage infiltration, cytokine/chemokine production, and NF-κB activity in both DOCA-salt-hypertensive strains with a greater effect in DOCA-salt-treated TRPV1−/− compared to DOCA-salt-treated WT mice.

CONCLUSIONS
Our data showed that blockade of CCR2 with RS504393 attenuated DOCA-salt hypertension-induced renal injury in WT and TRPV1−/− mice independently of their effects on blood pressure. The protective effect was greater in TRPV1−/− mice compared to WT mice. The results suggest that deletion of TRPV1 aggravated salt-sensitive hypertension-induced renal damage possibly via enhancement of the MCP-1/CCR2-mediated monocyte/macrophage infiltration. [This work was supported by a grant from the National Natural Science Foundation of China (No. 8170243)].

GW26-e0197
Exploring the Active Ingredients in Chinese Yellow Wine Which Could Inhibit the Progress of Atherosclerosis in LDLR Knockout Mice
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OBJECTIVES
To explore the active ingredients in Chinese yellow wine which could inhibit the progress of atherosclerosis in LDLR knockout mice.