were all significantly decreased in C group compared with the S group; the levels in IB group were all significantly higher than those in C group. Atrial tissue from C group showed a large amount of interstitial fibrosis distributed throughout the tissue, evidenced by Masson staining, Sirius Red Staining and the expression of collagen-I by immunohistochemistry analysis. The expression of CT-1 in immunofluorescence analysis and Realtime PCR were all significantly higher in C group than those in S group (p<0.05), while decreased in IB group (p<0.05), which was consistent with the changes of AT1R, and ACE. **Conclusions** The expression of CT-1 significantly increased in atrial fibrosis in a canine model of atrial fibrillation, whereas irbesartan could decrease its expression. The results indicated that irbesartan could relieve atrial interstitial fibrosis, which was probably associated with the change of CT-1 expression.

**Objective** Atrial fibrillation (AF) is one of the most common arrhythmias. The atrial interstitial fibrosis, is favourable for the occurrence and persistence of AF, which concerned with the Renin-Angiotensin System (RAS). We aim to study the dynamic changes of CT-1 both at mRNA and protein level in the atrium and the relationship between those changes and atrial interstitial fibrosis.

**Methods** Twenty two Male healthy canines were randomly divided into 3 groups: Sham group (S group, n=6), model group (control, C group, n=8), and pacing+irbesartan treatment group (IB group, n=8). Masson staining and Sirius Red Staining were used to analyse collagen accumulation. Immunohistochemistry analysis of collagen-I, immunofluorescence analysis of CT-1 were done in the study. The mRNA level of CT-1 and angiotensin receptor type 1 (AT1R), angiotensin-converting enzyme (ACE) of atrium were all determined by Realtime-PCR analysis, respectively. Trans-thoracic echocardiography (TTE) was performed at baseline and after rapid pacing.

**Results** There are six canines in each group at the end of the study. After eight weeks of rapid atrial pacing, all the canines in C group, no canines in S group, and two canines in IB group were subjected to atrial fibrillation-both spontaneous and induced by burst stimulation. The diameter of the left atrium and the right atrium and left ventricular ejection fraction (LVEF)