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250 word limit (not inclusive of the category headers) – if you exceed this limit your abstract will be rejected. Structured Summary – concise, max. 250 words, divided, under separate headings, into Objectives, Methods, Results, and a brief (2 sentence) statement explaining the impact of the work on small animal primary care or referral clinical practice. The Summary should not contain non-standard abbreviations or acronyms.

Title:

Tissue Doppler imaging at the mitral annulus for prediction of new-onset atrial fibrillation

Abstract: **(Your abstract must follow this structure)**

Objectives: Echocardiographic predictors of atrial fibrillation (AF) are lacking in veterinary medicine. Prolongation of time from onset of ECG P wave to peak of left atrial (LA) lateral wall A' wave velocity (P-PA') from pulsed-wave tissue Doppler imaging (PW-TDI) can predict new-onset AF in humans. This study investigated echocardiographic variables (including P-PA') which may identify dogs which developed AF within 6 months.

Methods: A review of dogs with underlying cardiac disease was done and split into two groups; those which developed AF within 6 months after echocardiography (AF Group) and those which did not (non-AF group). Cases were selected to have had complete echocardiogram, and similar body weights and atrial dilatation (2D LA:Ao ratio) between groups. 2D, M-Mode and PW-TDI values were compared between the 2 groups. Durations of P-PA' on the ventricular septal (P-PA'$_{septal}$) and lateral mitral annulus (P-PA'$_{lateral}$) PW-TDI were measured.

Results: 64 dogs were included (21 AF; 43 non-AF). Risk of developing AF was not associated with gender or underlying cardiac disease.
The AF group had significantly greater left-ventricular (LV) end-diastolic (ED) and end-systolic (ES) volumes, M-Mode LV ED and ES diameters, LV ED diameter indexed for body weight, LA maximal diameter, PW-TDI$_{lateral}$ E' velocity, and P-PA'$_{lateral}$ and P-PA'$_{septum}$ durations.
P-PA'$_{lateral}$ duration was superior to other echo variables at predicting AF development within 6 months (AUC: 0.856; cut-off > 81.1 ms: specificity 86 %; sensitivity 73.7%).

Statement: Duration of P-PA'$_{lateral}$ can identify dogs at risk of new-onset AF. The obtained cut-off warrants confirmation in a prospective study.