Cardiac biomarkers are clinical measures of myocardial pathology and may be useful in assessing cardiac damage in heartworm disease (HWD), both at baseline and during adulticide treatment. The purpose of this study was to assess cardiac biomarkers in monitoring myocardial damage in dogs undergoing HWD treatment. Fifteen heartworm-infected dogs were included and divided into worm burden groups (low \( n = 9 \) vs high \( n = 6 \)) based on level of antigenemia and severity of echocardiographic findings. Biomarkers measured included the cardiac troponin I (cTnI), myoglobin, creatine kinase MB (CK-MB) isoenzyme, and aspartate aminotransferase (AST). On day 0, dogs with high worm burdens had increased cTnI concentrations and increased CK-MB levels, whereas dogs with low worm burdens were within normal limits for these biomarkers. On day 91, most dogs had elevated myoglobin, CK-MB, and AST; however, this was most likely secondary to melarsomine injection-site myositis. Dogs with high worm burdens had elevated levels of cTnI for the length of the study, whereas cTnI in dogs with low worm burdens remained within ranges. Cardiac biomarker use appeared supportive for monitoring and evaluating myocardial damage during HWD treatment.

**Commentary**

Cardiac biomarker measurement has been suggested as an accessible and affordable means to screen for underlying cardiac disease and monitor its progression, and assess treatment efficacy. cTnI has a very short half-life. Elevations in cTnI can be directly correlated with active myocardial necrosis or inflammation. There does not appear to be any benefit to running this additional diagnostic test in routine cases and asymptomatic patients. In patients with clinical signs during any phase of therapy, however, awareness of elevated cTnI could be useful and may help treatment decisions, such as whether to use steroids as adjunctive therapy to reduce or prevent further myocardial inflammation and necrosis.—Amara Estrada, DVM, DACVIM (Cardiology)

**Source**