Background: In patients with systemic mastocytosis (SM), several aspects of morbidity remain poorly understood. We assessed the risk of solid cancers, cardiovascular disease, anaphylaxis, and osteoporosis in SM patients.

Methods: Using Danish medical registries, we conducted a nationwide population-based cohort study including 687 adult (≥15 years) SM patients diagnosed during 1997-2012. A comparison cohort of 68,700 subjects from the general Danish population who were alive and without SM at the given SM subject’s diagnosis was age- and gender-matched. Outcomes were a new diagnosis of solid cancer, venous thromboembolism (VTE), myocardial infarction (MI), stroke, anaphylaxis, or osteoporosis.

Findings: For solid cancers the hazard ratio (HR) was 2.4 (95% confidence interval [CI] 1.9-2.8) with a 10-year absolute risk (AR) in the SM-cohort of 12.6% (95% CI 9.4-16.3). Specifically, we found a HR of 7.5 (95% CI 4.4-13.0) for melanoma and a HR of 2.5 (95% CI 1.7-3.6) for non-melanoma skin cancers (NMSCs). For VTE we found a HR of 1.9 (95% CI 1.2-3.0), with a 10-year AR of 3.9% (95% CI 2.3-6.1); for MI a non-significant increased HR of 1.4 (95% CI 0.9-2.3), with a 10-year AR of 1.8% (95% CI 0-9.3.2); and for stroke a HR of 1.6 (95% CI 1.1-2.3) with a 10-year AR of 4.6% (95% CI 2.8-6.9). The HR for anaphylaxis was 7.2 (95% CI 5.3-9.9), and the10-year AR was 3.1% (95% CI 1.9-4.9). For osteoporosis the HR was 3.6 (95% CI 2.7-4.6) with a 10-year AR of 7.2% (95% CI 5.2-9.8).

Interpretation: SM patients are at increased risk of solid cancers – especially melanoma and NMSC – and cardiovascular disease. The risk of anaphylaxis and osteoporosis is clearly increased in SM, though absolute risk was low in this population-based study.