**SUPPLEMENTAL MATERIAL**

**Supplemental results**

*LV obstruction*

During 19,889 person-years of follow-up in 2912 patients, the cumulative incidence of LV obstruction was almost twice as high in patients with non-sarcomeric HCM versus sarcomeric HCM (**Supplementary Figure 1A**). Age-specific incidences of LV obstruction was higher in patients with non-sarcomeric HCM across all age-groups (**Supplementary Figure 1B**). Since patients with non-sarcomeric HCM had a higher burden of cardiovascular risk factors, we performed Cox regression adjusted for age at HCM diagnosis, sex, presence of hypertension or obesity and being a proband. Patients with non-sarcomeric HCM had an adjusted HR of 1.51 (CI: 1.27-1.80) for the presence of obstructive physiology.

*Cardiac arrhythmias*

The incidence of atrial fibrillation was evaluated over 33,069 person-years of follow-up in 4,768 patients without atrial fibrillation at baseline. The cumulative incidence of atrial fibrillation was similar in non-sarcomeric and sarcomeric HCM during follow-up (log-rank p =0.078) (**Supplementary Figure 2a**). To account, for factors associated with developing atrial fibrillation, we performed multiple Cox proportional hazards models adjusting for age, obesity and hypertension. In this analysis, having sarcomeric HCM was associated with a HR of 1.32 (CI: 1.12 to 1.56, p=0.001) for developing atrial fibrillation. Next, we calculated the age-specific incidence of atrial fibrillation and found this to be significantly higher in patients with sarcomeric HCM across all evaluated age-groups (**Supplementary Figure 2c**), with an age-standardized incidence ratio of 1.24 (CI: 1.13 to 1.37, p <0.001) for atrial fibrillation in sarcomeric HCM (25 [CI 24-30] versus 21 [CI: 19-24] per 1000 person-years).

The incidence of the composite ventricular arrhythmia outcome was evaluated over 39,147 person-years of follow-up in 5249 patients, without ventricular arrhythmias at baseline. The cumulative incidence was higher in sarcomeric HCM during follow-up (p =0.004) (**Figure 2b**). The age-specific incidence of the composite ventricular arrhythmia outcome was numerically higher in patients with sarcomeric HCM, across all evaluated age-groups (**Figure 2d**), with the most pronounced difference in patients older than 65 years. Overall, the age-standardized incidence rate in sarcomeric and non-sarcomeric HCM was 7.4 (CI 6.3-8.7) versus 5.5 (CI: 4.2-7.1) per 1000 person-years. This corresponds to a standardized incidence ratio of 1.30 (CI: 1.11 to 1.52, p <0.001) for ventricular arrhythmias in sarcomeric HCM.

*Left ventricular systolic dysfunction*

The incidence of LV systolic dysfunction was evaluated over 33,030 person-years of follow-up in 4756 patients with LVEF>50% at baseline. The cumulative incidence of LV systolic dysfunction was similar during follow-up (p =0.23) (**Supplementary Figure 3a**). However, the age-specific incidence rates of LV systolic dysfunction were numerically higher in patients with sarcomeric HCM (**Supplementary Figure 3b**) with an age-standardized incidence rate of LV systolic dysfunction of 13 (CI 12-15) versus 10 (CI: 9-12) per 1000 person-years. This corresponds to a standardized incidence ratio of 1.22 (CI: 1.07 to 1.39, p =0.003) in sarcomeric HCM.

**Supplementary Figure 1**



**Legend:** Incidence of obstruction in patients with sarcomeric versus non-sarcomeric HCM. **A.** Cumulative incidence of obstruction since first SHaRe evaluation, including numbers at risk by year. **B.** Age-specific incidence (ASI) rates of obstruction, including total person-years at risk in each age-group.

**Supplementary Figure 2**

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**Legend:** Incidence of arrhythmias in sarcomeric versus non-sarcomeric HCM, excluding patients diagnosed with these events prior to or at first SHaRe visit. Panel **A** shows the cumulative incidence of atrial fibrillation during follow-up, including numbers at risk, in sarcomeric (Sarc+, pink) and non-sarcomeric (Sarc-, blue) HCM. Overall, the cumulative incidence is similar between the two groups, with a trend towards a higher rate in non-sarcomeric HCM. Panel **B** shows the age-specific incidence (ASI) rates of atrial fibrillation during follow-up, including accumulated years at risk, in the two groups. Incidence rates are numerically higher for patients with sarcomeric HCM in all investigated groups, reaching statistical significance in the three youngest age-groups, and with a highly significant increased age-standardized incidence (ASI) in sarcomeric HCM (grey shading). Panel **C**, shows the cumulative incidence of the composite ventricular arrhythmia outcome since first SHaRe evaluation, in sarcomeric and non-sarcomeric HCM, showing that there is a higher cumulative incidence in sarcomeric HCM. Panel **D.** Shows the age-specific incidence rate of the composite ventricular arrhythmia outcome, including total person-years at risk in each age-group. The age-standardized incidence rate has been added as the final group. Overall, the largest difference in incidence of this outcome occurs in the group of patients older than 65 years.

**Supplementary Figure 3**



**Legend:** Incidence of left ventricular systolic dysfunction in patients with sarcomeric versus non-sarcomeric HCM. **A.** Cumulative incidence of obstruction since first SHaRe evaluation, including numbers at risk by year. **B.** Age-specific incidence rates of LV systolic dysfunction, including total person-years at risk in each age-group.

**Supplementary Figure 4**



**Legend:** Incidence of all-cause mortality in patients who are genotype-positive (pink) versus -negative (blue) for sarcomere variants. Panel **A.** Cumulative incidence since first SHaRe evaluation, including numbers at risk by year. Panel **B.** Age-specific incidence rates, including total person-years at risk in each age-group. The age-standardized incidence rate (ASI) has been added as the final group. The standardized incidence ratio (SIR) has been added for each age-group at the bottom of the plot.