

Update on baseline data and first 1-year follow-up from the German multi-center myocarditis registry in pediatric patients: "MYKKE"

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Objective and Methods:

There is only limited data on epidemiology, diagnosis and therapy of myocarditis in children and adolescents. MYKKE, a prospective registry for myocarditis from pediatric heart centers, university hospitals and community hospitals in Germany, aims to overcome this knowledge gap.

Inclusion criteria are age < 18 years, hospitalization for suspected myocarditis, and written consent.

This analysis presents baseline and follow-up data on age-related clinical differences in this multi-center cohort.

Results

By March 2017, 19 centers across Germany have enrolled 233 patients. Baseline data show clear trends for age: 0-<2 years (23%), 2-12 years (20%) and 13-18 years (57%); gender: male 65% (Figure 1). Decrease of exercise capacity (70%) was the leading symptom, followed by dyspnea (38%), angina (38%), arrhythmia (28%), feeding intolerance (20%) and syncope (12%). 55% had an infection less than 6 weeks ago, 37% fever.

Patients 0-<2 years had the highest incidence of reduction of ejection fraction (EF) below 30% (61%) compared with age groups 2-12y (43%) and 13-18y (8%, Figure 2). Furthermore they and the 2-12 year group had the highest need for VAD and/or ECMO therapy (28%; 2-12 years: 22%; 13-18 years: 7%; Figure 3).

Most children died in the 0-<2 years group (12.5%). The overall mortality was 5.2%. By now we have the follow up data of 118 patients with a median time of 8.7 ± 5.2 month after first visit. The median EF increased significantly from 48% at initial presentation to 63% at follow up (p<0.001; Figure 4).

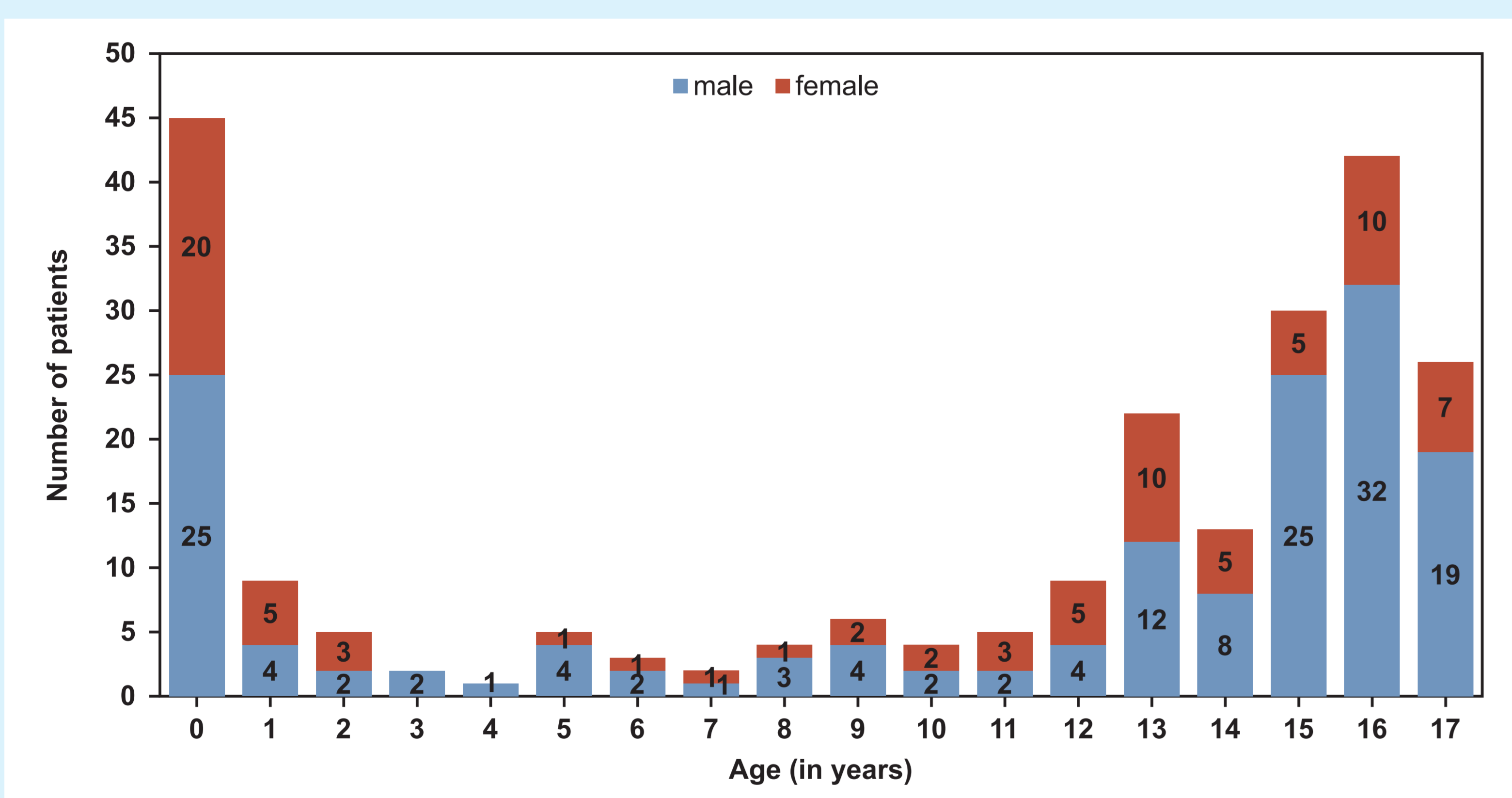


Fig.1: Age at symptom onset (n=233)

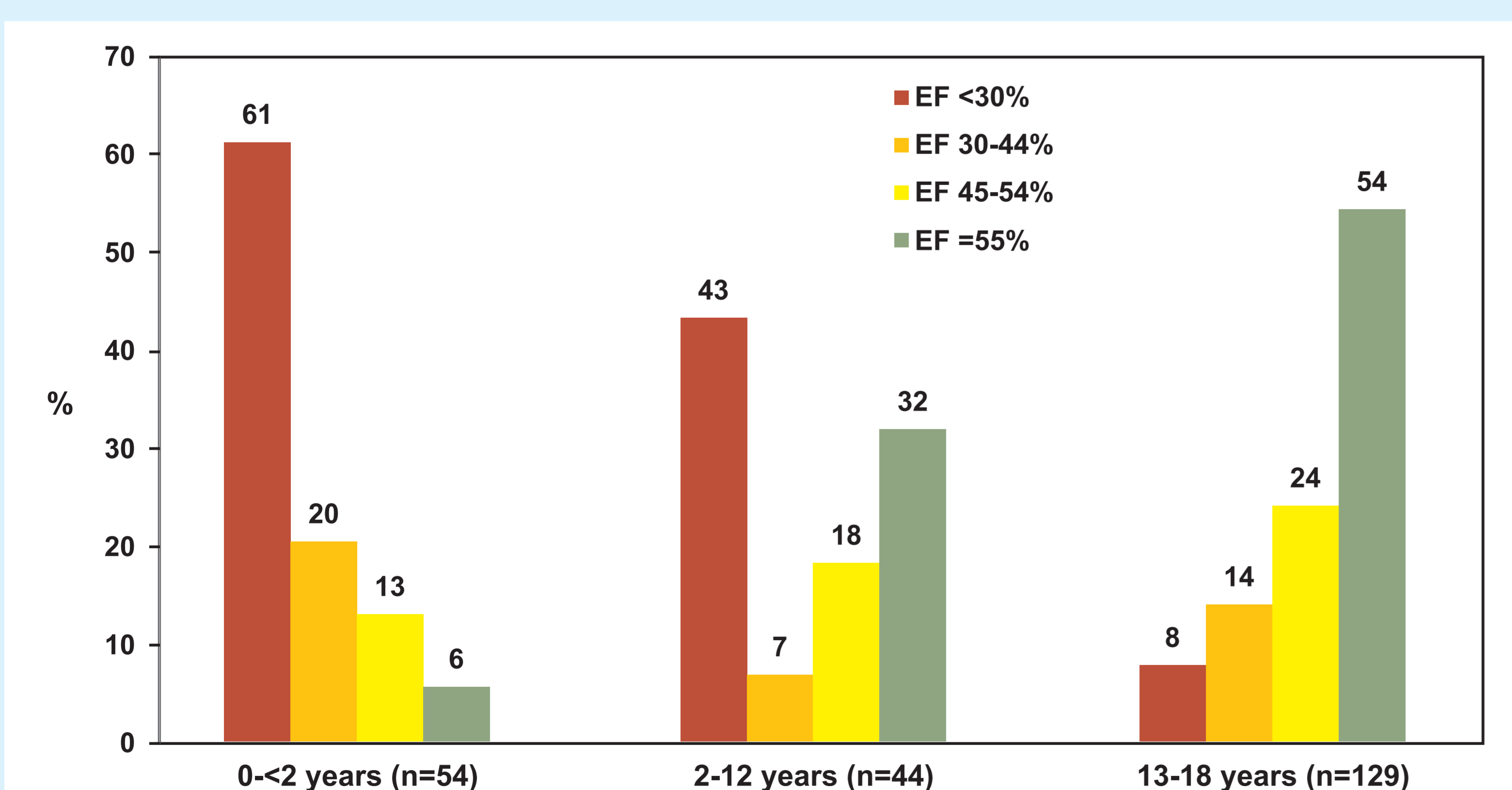


Fig.2: Left ventricular ejection fraction (EF) according to age groups (n=227)

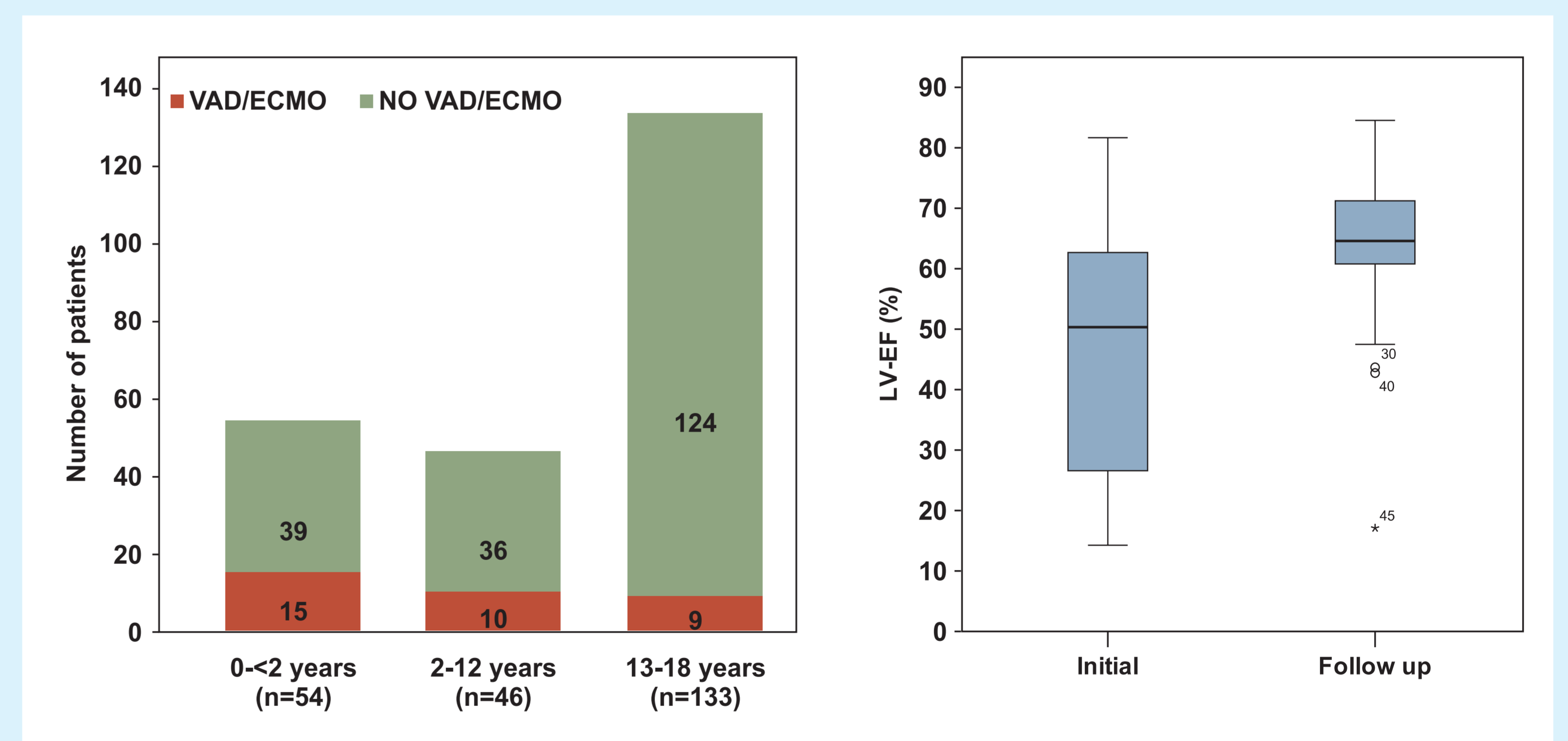


Fig.3: VAD and/or ECMO therapy according to age groups Fig.4: Changes in LV-EF (%) between first visit and follow up (n=45; p<0.001).

Conclusions

With its ongoing enrollment, MYKKE is a successful multi-center registry for myocarditis in children and adolescents. The data underline two age peaks with a severe clinical course and more adverse events in the youngest patients.

MYKKE serves as a platform for deriving diagnostic criteria and will in future facilitate interventional studies.