A Real-World Pharmacovigilance Study of Rituximab in Two Heart Failure Phenotypes: Heart Failure With Preserved Ejection Fraction (HFpEF) and Heart Failure With Reduced Ejection Fraction (HFrEF).

Renusri Ede[1]; Izuchukwu Anaesiuba[2]; Mohammad Awadallah[3]
[1]NRI Medical College, Guntur, Andhra Pradesh, India; [2]Madonna University, Rivers State, Nigeria; [3]University of Medical Sciences and Technology, Khartoum, Sudan

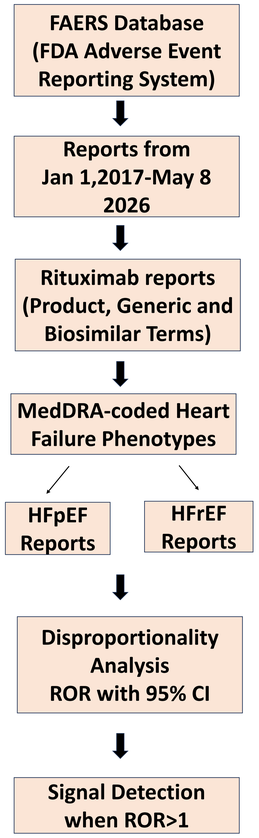
Background

- Rituximab is a CD20-directed monoclonal antibody widely used in hemato-oncology for the management of Non-Hodgkins Lymphoma (NHL), Aggressive B-cell Lymphoma (ABCL) and Chronic lymphocytic leukemia (CLL).
- Known Adverse events: Acute infusion reactions, tumor lysis syndrome, and arrhythmias.
- Cardiac safety data in specific heart failure phenotypes remain limited.
- HFpEF and HFrEF may have distinct safety profiles.

Aim

To evaluate the disproportionality reporting of HFpEF and HFrEF associated with rituximab therapy within the FAERS database.

Methods



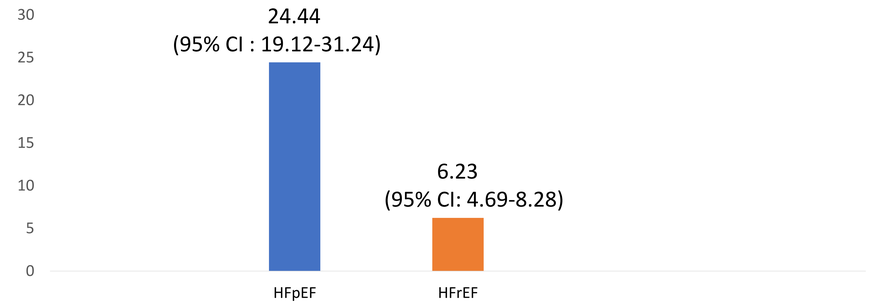
- Observational, retrospective pharmacovigilance study.
- **Database**: the FAERS public dashboard from 1st January 2017 through 8 May 2026.
- **Search Strategy**: Cases associated with Rituximab were identified using a comprehensive list of product, generic, and biosimilar terms.
- Outcomes limited to MedDRA-coded HFpEF and HFrEF.
- Broad cardiac failure terms were excluded to preserve ejection fraction phenotype specificity.
- Separate disproportionality analyses performed for HFpEF and HFrEF.
- Reporting odds ratios (RORs) with 95% CIs were calculated.
- Signal considered positive when the ROR>1.

Results

HFpEF Reports 77

HFrEF Reports 50

Figure 1: Disproportionality Signal Strength (ROR)



HFpEF demonstrated a stronger disproportionality signal than HFrEF (ROR 24.44 vs 6.23)

HFpEF reports were more frequently female than HFrEF reports. (62.3 VS 44.0%)

Hospitalization and life-threatening outcomes were more frequently reported in HFrEF, while death was reported more often in HFpEF.

Figure 2: Female Distribution (%)

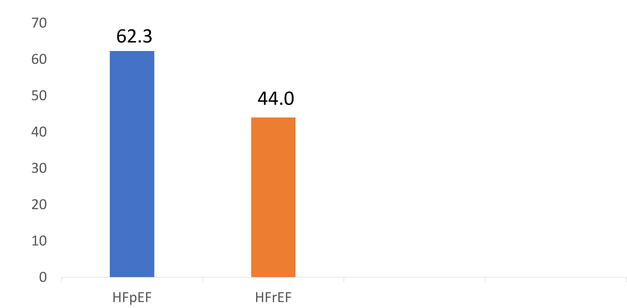
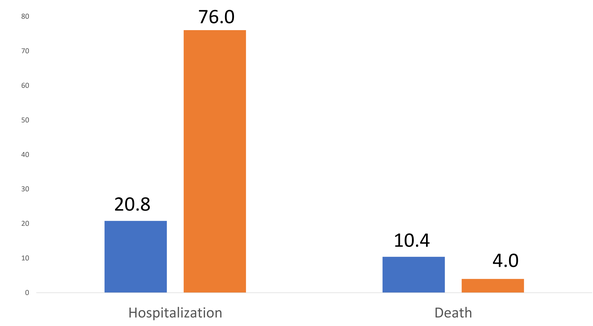


Figure 3: Serious Outcomes (%)



Conclusion

- Rituximab-associated reports demonstrated disproportionate reporting for both HFpEF and HFrEF, with a markedly stronger signal for HFpEF than HFrEF.
- Clinically serious outcomes occurred in both phenotypes.
- Further patient-level studies are needed due to limitations of spontaneous reporting and potential confounding from concomitant oncology treatments.

Clinical Implications

- Monitoring: Consider baseline and periodic echocardiographic assessments of LVEF and diastolic function in patients receiving rituximab.
- Symptom Surveillance: Monitor for early heart failure symptoms like dyspnea and peripheral edema.

References