Cardiac magnetic resonance imaging paralleled recurrent pericarditis clinical response to rilonacept treatment over 18 months: a RHAPSODY subgroup analysis

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Background: Rilonacept treatment in RHAPSODY resolved active pericarditis recurrences, and long-term treatment led to sustained risk reduction. Prior analysis linked greater baseline Late Gadolinium Enhancement (LGE), with more rapid recurrence upon rilonacept suspension after 12 weeks of treatment. Serial cardiac magnetic resonance (CMR) imaging (T2-STIR, LGE) enabled longitudinal assessment for tracking clinical improvement, guiding decision-making, and predicting patient outcomes after treatment cessation.

Methods: At the long-term extension (LTE) 18-month decision milestone (18MDM), investigators chose, based on clinical status, to continue rilonacept, suspend rilonacept/observe, or discontinue the LTE. An imaging core lab blinded to clinical data measured pericardial thickness and graded pericardial edema (T2-STIR) and LGE at baseline and 18MDM. Pericarditis recurrence was assessed clinically following rilonacept suspension.

Results: Baseline and 18MDM CMRs were available for 13 patients. Reductions in pericardial thickness, T2-STIR, and LGE from baseline to 18MDM were measured while on treatment. CMRs were obtained in 7/8 patients suspending rilonacept at 18MDM: LGE was none/trace, and T2-STIR was negative; yet, 5/7 (71%) had pericarditis recurrence within 1-4 months of rilonacept suspension despite prophylactic colchicine (n=2).

Conclusions: Continued clinical improvement during prolonged rilonacept treatment corresponded with improvement on CMR, including reduced pericardial thickness, resolution of pericardial edema on T2-STIR, and resolution of LGE. Negative/trace LGE at 18MDM while on treatment did not predict absence of pericarditis recurrence upon subsequent rilonacept suspension in this size-limited subgroup. Larger prospective studies examining CMR parameters in guiding RP treatment duration decisions and informing associated clinical outcomes are warranted.

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