Methotrexate (MTX) in monotherapy is commonly the first prescribed treatment to newly diagnosed rheumatoid arthritis (RA) patients, though a significant portion of patients do not exhibit a good response to treatment. Previous studies have shown that RA diagnosis aggregates within families but whether disease characteristics, e.g. treatment outcome, also has a familial component is unclear. Here, we present results from the first investigation of familial aggregation and heritability of persistence to treatment with MTX in monotherapy within a cohort of Swedish early RA patients. Our study finds that persistence to treatment at three years, but not at one year, aggregates within families with a minor and modest heritability for persistence at one and three year respectively. We conclude that persistence to MTX in monotherapy does aggregate within families of early RA patients and that the magnitude of this component increases with time.