Damage accrual in patients with lupus is due to both the disease itself and the medications used to treat the disease, especially corticosteroids. The disease courses in patients with lupus vary, with most patients running a relapsing remitting course (RR), a smaller number pursue a permanently active (PA) course, and another minority running a monophasic (M) prolonged remission course. In an inception cohort of 232 patients followed for 10 years we found that 76% followed a RR course, 10.8% a PA course and 11.6% a M prolonged remission course. Despite disease activity over time being better controlled in the modern era, patients with RR lupus will spend almost half of their course with active disease, resulting in significant damage accrual over time. In an inception cohort of 73 patients followed for 15 years, with a mean duration on corticosteroids of 117 months, there was a progressive increase in damage and at 15 years with 80% of the damage items recorded being definitely or possibly corticosteroid related. Furthermore, it has been shown that early damage is a predictor of mortality. In 263 inception patients followed for 10 years, 190 (72%) had no early damage and 73 (28%) had early damage. In patients with early damage, 25% died within 10 years as compared to only 7.3% with no early damage (p= 0.0002). Thus, prevention of damage accrual is a key objective in the management of patients with lupus.

We examined whether damage accrual over a 5-year period is reduced with the prior use of antimalarials. Of an inception cohort of 354 patients who had a first ACR/SLICC score of 0, 75 developed damage over the first 5 years and these were matched with 150 controls with no damage. Antimalarials were protective for damage accrual in the first 5 years supporting their use at diagnosis. Finally belimumab, the first biologic approved for the treatment of lupus, has been assessed for the prevention of long term damage accrual. Patients followed long term from the original belimumab trials, compared with propensity score matched patients from the University of Toronto Lupus cohort matching for 17 clinical variables, showed that belimumab reduced organ damage progression, slowed the rate of organ damage progression and reduced the magnitude of year-to-year organ damage.

Learning Objectives
- Describe damage accrual and the nature of the damage
- Describe how damage accrual is associated with mortality
- Demonstrate that hydroxychloroquine protects against damage accrual
- Demonstrate that belimumab protects against damage accrual

REFERENCES