Background and importance Glucocorticoids (GC) use among patients with arthritis is common, but due undesirable side effect it is vital to minimize their use as possible. The introduction of TNFα inhibitors has been a breakthrough in the treatment of arthridis leading to remission for many patients. In the literature there is however scarce information regarding the impact of TNFα inhibitors on GC use among these patients.

Aim and objectives To explore oral GC use in patients with rheumatoid arthritis (RA), psoriatic arthritis (PsA) and ankylosing spondylitis (AS) before and after initiation of treatment with TNFα inhibitors (TNFi).

The aim was also to evaluate if those patients on long term GC treatment were receiving adequate preventive osteoporosis treatment and how treatment with TNFi affect the use of topical steroids in patients with PsA.

Materials and methods Clinical data on patients with RA, PsA and AS which initiated TNFi therapy with etanercept, infliximab, adalimumab or golimumab for the first time between 2005-2015 was collected from the ICEBIO registry, a nationwide register on all patients treated with biologic drugs due to rheumatologic disorders in Iceland. Five controls were randomly selected from the Icelandic Medicine Database in Iceland (IMD) and matched to each patient in relation to age, sex and time frame. The use of oral GC, topical steroids and bisphosphonate was collected from IMD for period of four years, two years period before and two years period after the initiation of TNFi. The use was then evaluated in number of individuals, number of prescriptions and DDD (Defined Daily Dose).

Results 621 patients with RA, PsA or AS received 2630 prescriptions (3105 controls received 1337 prescriptions) for GC during the research period. The GC use varies between patient groups. The total GC use (DDD) doubled over the two-year period prior to the TNFi treatment, but decreased sharply after the initiation of TNFi. The number of individuals on GC decreased by one third after initiating TNFi therapy and the majority of those who continued GC treatment were patients with RA. 38% of those on long term GC treatment (<7.5 mg/day for three months) were receiving adequate preventive treatment for osteoporosis. The use of topical steroids decreased by half among PsA patients and one third discontinued the treatment after initiating TNFi.

Conclusion and relevance TNFi therapy does impact GC use among patients with arthridis, however large portion of RA patients are still on GS two years after initiation TNFi therapy. Better osteoporosis treatment is warranted for these patients.