Optimal Infliximab and Biosimilar Dosage and Infusion Frequency for Hidradenitis Suppurativa Control

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Introduction

- **Hidradenitis suppurativa (HS)** is a chronic inflammatory dermatologic disease characterized by painful nodules and abscesses in intertriginous areas that can progress to form sinus tracts and tunnels, leading to significant scarring[1]
- Most prevalent among African American patients, low-income patients, and patients with diabetes mellitus, obesity, or other cardiovascular diseases
- **Infliximab (IFX)** is an IV-administered chimeric anti-tumor necrosis factor-α (TNF-α) monoclonal antibody with demonstrated efficacy in reducing HS severity[2,3]
- IFX has the advantage of **weight-based dosing**, allowing higher doses for patients with obesity
- Currently **no standardized dosing regimen** of IFX or its biosimilar formulations for HS management
- Clinical guidelines suggest infusion of 5 mg/kg every 8 weeks with titration up to 10 mg/kg every 4 weeks depending on patient response[4]
- Recent studies have indicated **better outcomes** may be achieved if patients **initiate maintenance therapy at higher doses and frequencies**[5-7]
- Early disease control is extremely important for mitigation of scar formation, permanent tissue damage, and potential complications[5,8]
- If determined to be more effective and comparably safe, **initiating IFX or biosimilar therapy at a higher maintenance dosage and/or frequency** than currently suggested **could improve patient outcomes**

Objective

We aimed to determine the most effective IFX dosage regimen for HS.

Methods

- Retrospective chart review of HS patients seen in the dermatology department at University Medical Center (UMC)
- Data collected from Epic electronic medical records and stored in LSUHSC REDCap database
- Patients met inclusion criteria if they were initiated or continued on IFX or a biosimilar by a dermatologist at UMC between January 1, 2020, and December 31, 2023
- We defined **effective treatment** as the **regimen required to attain disease control**, evidenced by disease stabilization and lack of progression

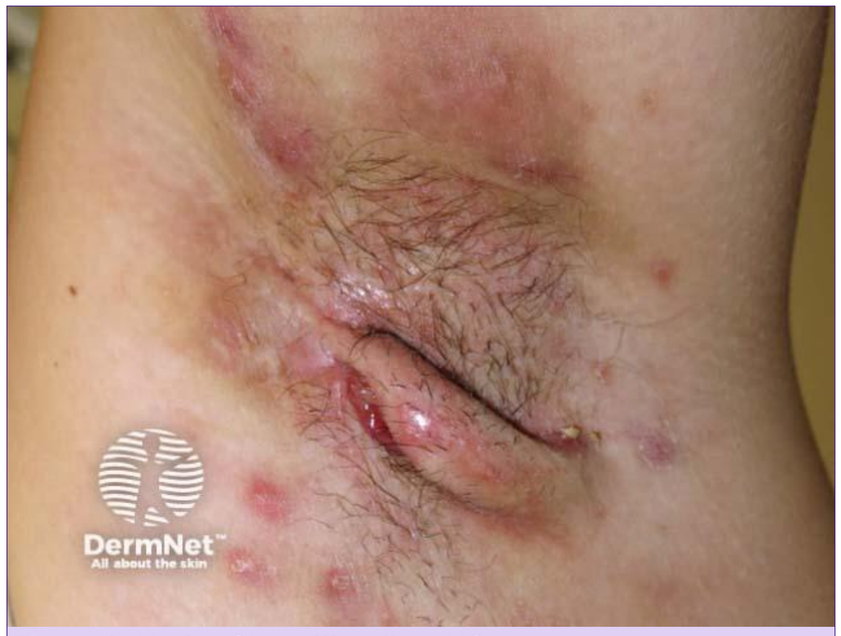

Figure 1. Hurley Stage III axillary HS.
Image sourced from DermNet: https://dermnetnz.org/imagedetail/16951-hidradenitis-suppurativa-of-axilla

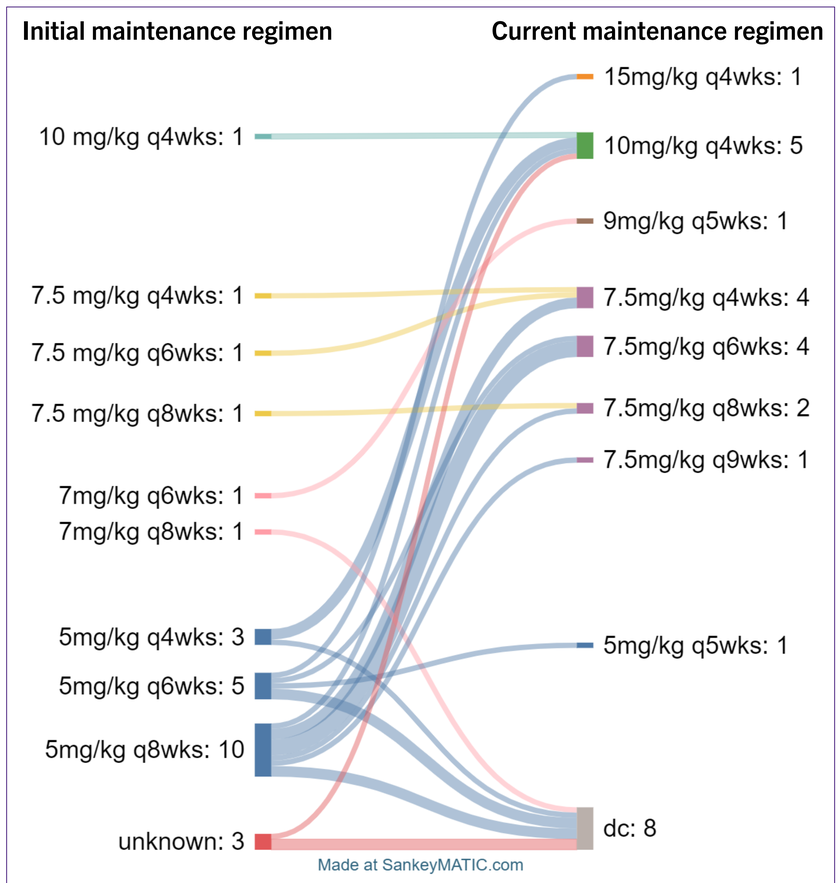

Figure 2. Initial IFX or biosimilar maintenance regimen vs current regimen for HS control.
Numbers following colons represent number of patients on regimen.
q#wks = every # weeks; dc = discontinued

Results

- 27 patients met inclusion criteria
- 26 patients had Hurley Stage III HS (highest severity); severity was not recorded for 1 patient
- Mean BMI of cohort = 36.38
  - 17 patients (63%) had BMI ≥ 30
- 8 patients discontinued IFX therapy
  - 1 temporarily discontinued due to pregnancy
  - Other reasons for discontinuation: documented 'failure' at low-dose without up-titration, infusion reaction, chronic infection, liver injury
- 18 patients (66.6%) initiated maintenance therapy at 5 mg/kg, most (10/18, 55.5%) at 8-week intervals
  - All either required dosage/frequency increase to attain disease control (13/18, 72.2%) or discontinued IFX (5/18, 27.8%)
- 5 initiated maintenance therapy at 7 or 7.5 mg/kg
  - 2 remained stable, 2 required dosage or frequency increase, and 1 discontinued IFX
- 1 patient initiated maintenance therapy at 10 mg/kg every 4 weeks and remained stable on this regimen
- Most common infusion frequency required for disease control was 4-week intervals (10/19 still on IFX, 52.6%)
- IFX regimen with highest proportion of stable patients was 10mg/kg every 4 weeks (5/19, 26.3%)

Conclusions

The number of patients remaining on IFX who required dosage increase (13/19, 68.4%) and the stability attained with higher dose/frequency regimens **support initiation of IFX/biosimilar maintenance therapy at higher doses and frequencies**, eg, 7.5-10 mg/kg every 4-8 weeks, to hasten disease control in HS patients, thus limiting tissue damage, pain, and disability, and improving quality of life. The benefit of weight-based dosing of IFX is also evident in this cohort with a BMI range of 20.63-69.40. Minimal elevations in adverse events were seen upon dose escalation, indicating that benefits derived from disease control outweigh risks of high-dose high-frequency IFX therapy.

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