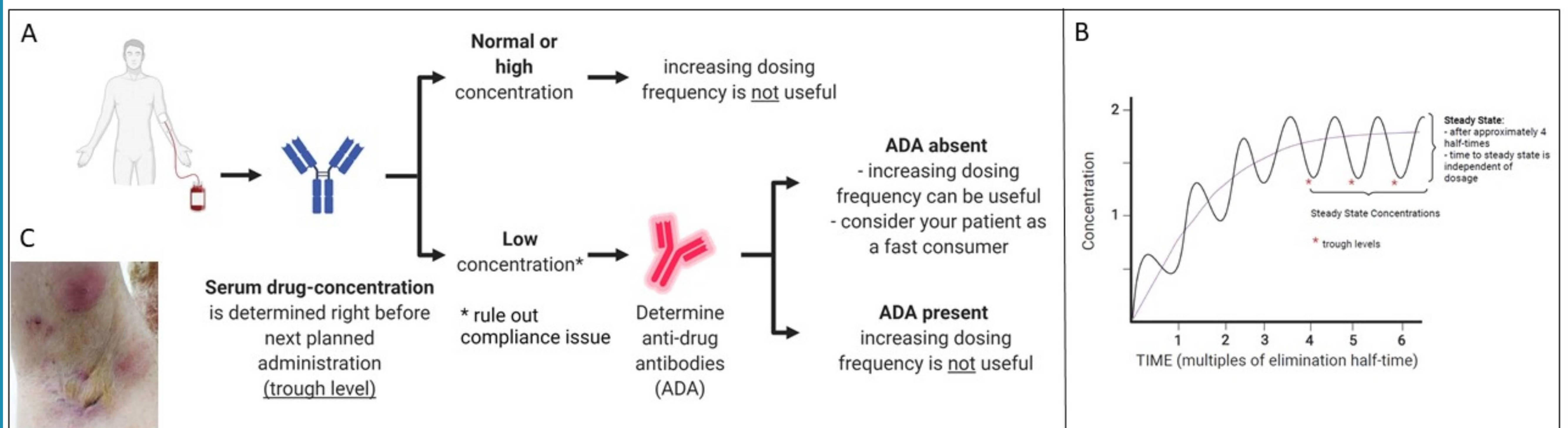


Guiding the Treatment of Hidradenitis Suppurativa: A Role for Therapeutic Drug Monitoring

Background

Although the precise pathophysiology of hidradenitis suppurativa (HS) is yet to be elucidated, involvement of various cytokines has been proposed. Accordingly, the use of biologics has been introduced in the armamentarium and adalimumab is currently the only registered biologic for this indication. However, case series for IL-12/23 and IL 23-inhibitors are emerging. In case of therapeutic failure or loss of response to a biologic, therapy is often blindly adapted, whereas Therapeutic Drug Monitoring (TDM) might assist in a personalized approach to optimize treatment. TDM has shown to be effective in other inflammatory diseases with overlapping pathogenesis.



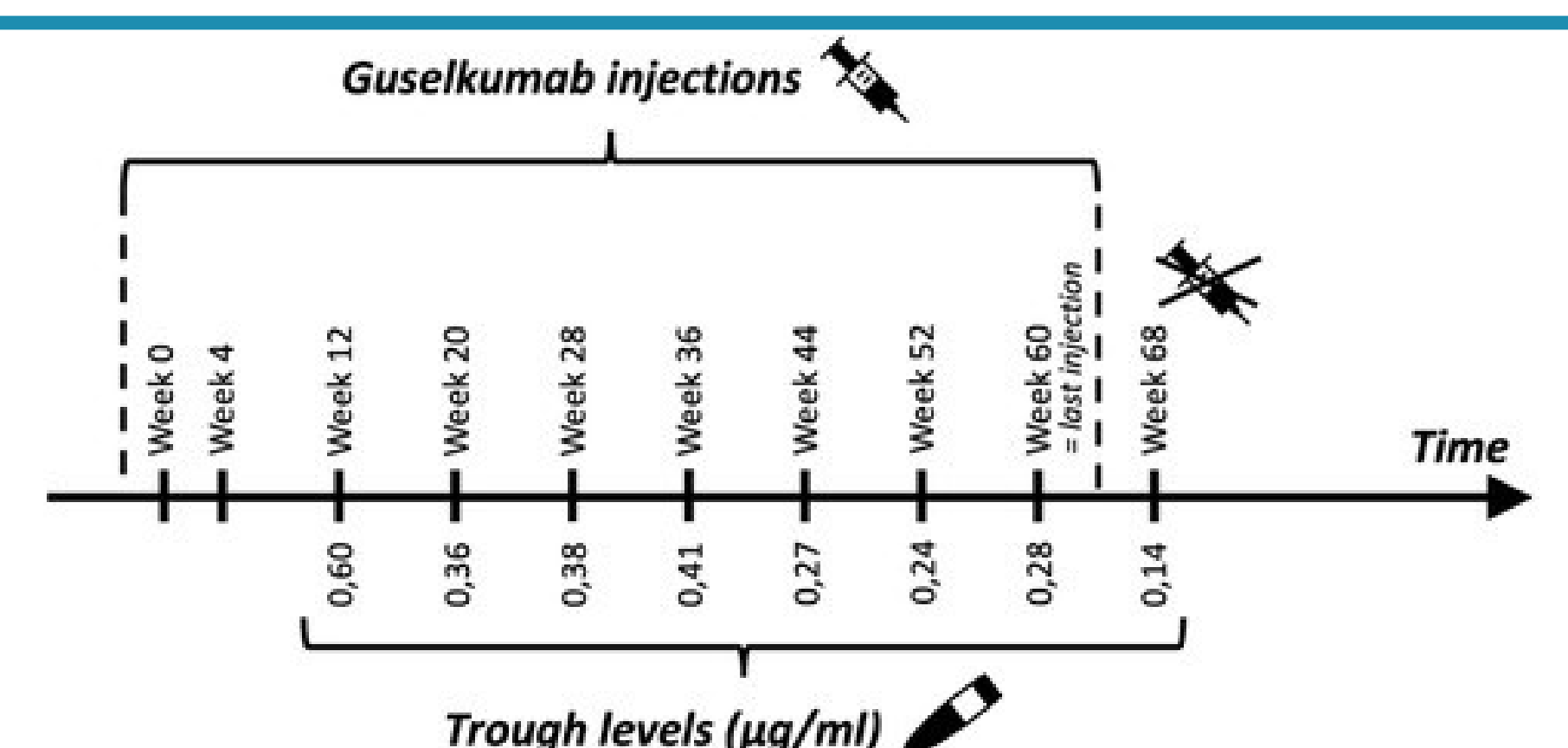
A. In Therapeutic Drug Monitoring (TDM) serum drug concentration is measured before next planned administration; B. Evolution of serum drug concentrations; C. Five months after start of adalimumab a clinical deterioration was seen, serum trough levels were undetectable.

Methods

We present a case of HS with waning response to first adalimumab and then guselkumab, trough levels (TL) were measured with ELISA (Laboratory for Therapeutic and Diagnostic Antibodies, Department of Pharmaceutical and Pharmacological Sciences, KU Leuven). Research of the literature (Pubmed) was conducted.

Results

Our patient showed a waning clinical response (figure C) that was paralleled by a drop in the Trough Levels (TL), first of adalimumab (in absence of anti-drug antibodies ADA), then of guselkumab - despite stable treatment and no remarkable life-style changes.



Conclusion

We considered our patient to be a 'fast consumer' of biologics. Little is known on the loss of response in patients with undetectable serum levels who don't reach a therapeutic steady state concentration without formation of ADA. TNF-mediated flares that 'consume' the anti-TNF drug and non-immune drug clearance are proposed causes for a loss of anti-TNF activity but further research is needed to further investigate this concept. TDM can be a strategy to optimize biologic effectiveness and individualize therapeutic decision making. Future research is warranted to determine optimal serum TL for therapeutic efficacy of the biologics in the treatment of HS.