

\$GDOLPXPDE %LRVLPLODU \$GDOLPXPDE DGEP  
3KDUPDFRNLQHWLFV LQ +HDOWK\ 3HUVRQV DQ  
'HWHUPLQH 3KDUPDFRNLQHWLF 6LPLODULWLHY

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assess the impact of switching treatment from Humira to adalimumab-adbm on PK using a Population Pharmacokinetic (PPK) approach.

## Conclusion

Using intensive PK data from the phase 1 investigation in healthy subjects, a PPK model was first built (NCT02045979). In patients with active RA, PPK models were created separately for the phase 3 base study (NCT02137226) and its extension study (NCT02640612). PPK models for adalimumab were established based on the treatment of healthy volunteers and RA patients with adalimumab-adbm and Humira. Adalimumab clearance was found to be influenced by weight and anti-drug antibodies. The PK of adalimumab-adbm and Humira were quite similar. Humira's effect on clearance was predicted to be 1.02 times that of adalimumab-adbm (*i.e.* Humira has 0.02 greater clearances). In the phase 3 extension research, the effect of treatment arms (switching) on clearance was assessed to be 1.00 and 0.997, respectively, for the Humira:Humira:BI and Humira:BI:BI arms, compared to the BI:BI:BI arm (BI refers to adalimumab-adbm).

The PPK method was used to demonstrate PK similarities between adalimumab-adbm and Humira in patients with active RA. When moving from Humira to adalimumab-adbm at week 24 or 48, the PK of adalimumab was also similar.

## References

1. Cao G, Yu J, Wu J, Wang J, Xue Y et al. (2020) A randomized, double blind, parallel group, phase 1 clinical trial comparing the pharmacokinetic, safety and immunogenicity of the biosimilar HS016 and the originator adalimumab in Chinese healthy male subjects. *Clin Pharmacol Drug Dev* 10:317-325.
2. Hillson J, Mant T, Rosano M, Huntenburg C, Alai-Safar M, et al. (2018) Pharmacokinetic equivalence, comparable safety and immunogenicity of an adalimumab biosimilar product (M923) to Humira in healthy subjects. *Pharmacol Res Perspect* 6.
3. Hyland E, Mant T, Vlachos P, Atkins N, Ullmann M, et al. (2016) Comparison of the pharmacokinetics, safety and immunogenicity of MSB11022, a biosimilar of adalimumab, with Humira® in healthy subjects. *Br J Clin Pharmacol* 82:983–993.
4. Poddubnyy D, Rudwaleit M (2011) Efficacy and safety of adalimumab treatment in patients with rheumatoid arthritis, ankylosing spondylitis and psoriatic arthritis. *Expert Opin Drug Saf* 10:655–673.
5. Scheinfeld NS. *Expert Opin Pharmacother* 11:1111–1121.