

Personalising care: using infliximab drug trough and anti-drug antibody levels is a safe and cost effective treatment strategy in Spondyloarthritis

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Introduction/ Aim:

Personalised medicine tailors treatment to the individual. Biologic drug dosing is standardised and there is paucity of data about the rationale and efficacy of dose adjustment. We conducted a service evaluation to measure serum infliximab drug trough level (DL) and anti-drug antibody (ADAb) in our axial spondyloarthritis (axSpA) and psoriatic arthritis (PsA) patient cohort receiving bio-originator infliximab with the aims of: 1) Informing clinical decisions before possible switch to biosimilar infliximab (CT-P13), 2) Assessing the impact of this approach to our clinical practice.

Methods

Patients provided consent and were counselled on the measurement of DTLs and ADABs to infliximab including possible treatment outcomes. A treatment algorithm was developed to guide the treating physician on treatment changes. Clinical and outcome data were recorded as per routine practice.

Results

A total of 53 patients were identified. Based upon the disease activity, DTL and ADAb, bio-originator infliximab was discontinued in 3 (6%) subjects, the infusion interval was extended in 8 (15%) and reduced in 3 (6%). The infliximab dose was reduced in 3 (6%) patients with no change in frequency interval. Four patients (8%) changed to an alternative biologic, either TNFi or alternative mode of action due to persistent high disease activity on infliximab. ADABs were absent in 20/28 (71%) patients on concomitant methotrexate (MTX). Very high titre ADABs were identified in 8 (15%) subjects with corresponding very low (n=2) or undetectable (n=6) DTLs suggesting a likely drug-neutralising effect. A total of 24 (45%) patients switched to biosimilar infliximab (CT-P13). Estimated cost-savings from drug regime changes based on therapeutic drug monitoring by DTL and likely drug neutralisation (low DTL and high ADAb) were an additional £28,689 per annum and biosimilar infliximab switching saved an estimated £41,184 per annum.

Discussion/ Conclusion

These data from a small cohort suggest that measuring DTLs and ADABs personalises treatment and is a cost-effective strategy in infliximab-treated SpA. This approach unlocks the potential of “personalised medicine” which supports individualised treatment and brings significant savings to the healthcare provider.