Algorithms for Therapeutic Drug Monitoring Guided Anti-tumour Necrosis Factor Therapy in Inflammatory Bowel Disease

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Therapeutic drug monitoring (TDM) guided anti-tumour necrosis factor (anti-TNF) drug therapy in Inflammatory Bowel Disease (IBD) can optimise clinical outcomes and reduce overall treatment cost beyond fixed or clinically guided dosing. Barriers to using TDM for anti-TNF drugs among gastroenterologists include lack of awareness of when to perform testing and how to act on results. This has been addressed by developing evidence-based consensus statements. The recommendations for interpreting TDM results among patients with active disease on anti-TNF therapy were summarised in an Algorithm 1. The recommendations for TDM among patients in clinical remission were summarised in Algorithm 2.

Algorithm 1: Interpreting TDM results in patients with bowel symptoms while on anti-TNF therapy. (Evidence for this algorithm is mainly in secondary loss-of-response; however, it may also be used to elicit mechanisms of failure and guide treatment decisions in primary non-responders).

Algorithm 2: Interpreting TDM results in patients in clinical remission while on anti-TNF therapy. (High-risk features include risk factors for disease relapse as well as risk factors for severe consequences in event of relapse).

Abbreviations: ADA: Anti-drug antibodies  IBS: Irritable bowel syndrome  IMM: Immunomodulator  TDM: Therapeutic drug monitoring  TL: Trough level

Gastroenterologists from Australia
Dr Jakobi Begun
Dr Robert Bryant
Dr Craig Gottle
Dr Simon Ghaly
Dr Vinay Kariyawasam
Dr Daniel Leimbang
A/Prof Peter Leawdon
Remi Mountfield
A/Prof Graham Rufford-Smith
A/Prof Miles Sparrow
Dr Daniel van Langeloort
Dr Mark Ward

Panelists from Other Disciplines
Prof Jennifer Martin (Clinical Pharmacologist)
Dr Catherine Toong (Immunologist)
We acknowledge Prof Michael Grimm and Dr Karnam Venagopal for participating in the 1st and 2nd voting rounds.

Non-voting Attendees
Fiona Bailey (GESA ex officio)
Dr Webber Chan
Gail Foster (Patient Representative)
Dr Care WA

A consensus committee of 22 national and international experts was formed. A literature search aided in the initial drafting of statements. A modified Delphi Method with three iterations was used. Panellists rated their level of agreement with individual statements as: A) agree without reservation, B) agree with minor reservation, C) disagree with some reservation, D) disagree without reservation, or F) reserved. Statements with ≥80% agreement without or only minor reservation (A+B) at the third voting round were accepted as consensus. Level of evidence (EL) and grades of recommendations (GR) for each statement were determined as per NHMRC recommendations.

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Wall Chart Supplement

27 excluded papers: conditions other than IBD or not relevant for proposed consensus statements

78 papers from Pubmed

51 papers included in literature search

53 combined papers

26 excluded papers: conditions other than IBD or not relevant for proposed consensus statements

51 papers from Medline

25 papers included in literature search

23 duplicate papers

87 additional papers and abstracts from reference list, international conferences and forwarded by panel members

140 total papers and abstracts

51 papers included in literature search

25 papers included in literature search

23 duplicate papers

140 total papers and abstracts