

Effectiveness of Sequential Lines of Biologic and Targeted Synthetic Drugs in Psoriatic Disease: A Systematic Review and Meta-Analysis

CE Gollins^{1,2}, R Vincent³, C Fahy¹, N McHugh², M Brooke⁴, W Tillett^{2,5}

Introduction

- 60 million people are affected by psoriatic disease (PsD) worldwide
- PsD → significant morbidity and a reduction in QOL
- Biologics and targeted small molecule disease modifying anti-rheumatic drugs (b/tsDMARDs) licensed over the past 20 years have been shown to be highly effective when used first-line in RCTs
- A proportion of patients need to switch treatment for example due to adverse effects and inefficacy

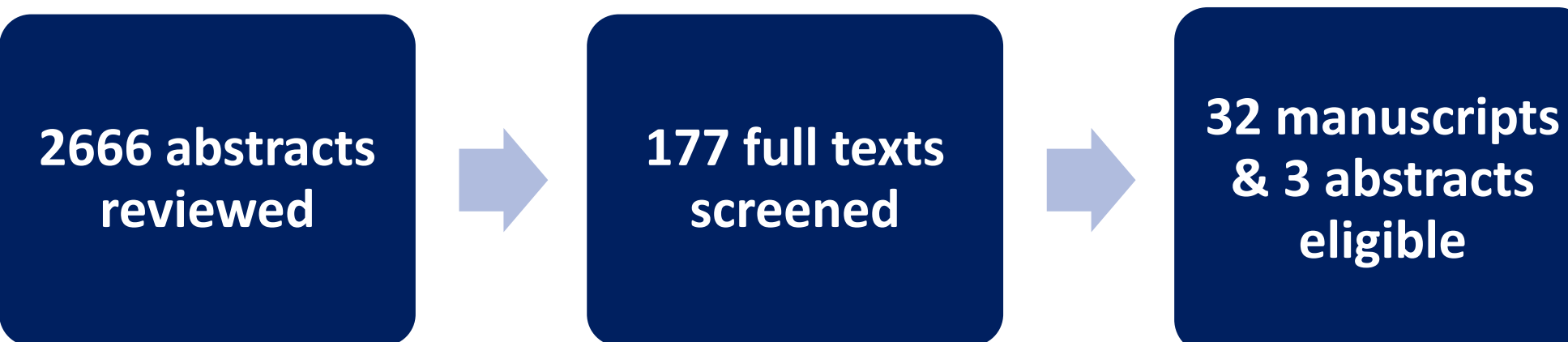
Objective To analyse current evidence of effectiveness of lines of b/tsDMARDs beyond first line in PsD

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Methods

- A systematic search of the literature was undertaken in October and December 2022
- Medline, Embase and bibliographic searches
- To find all studies assessing effectiveness of b/tsDMARDs used in PsA and psoriasis beyond first line
- Data extraction and a bias assessment (ROBINS-I or Cochrane RoB2) were undertaken for all included studies by two independent reviewers

Study Selection



Results

Psoriatic arthritis

12 studies were included, 11 observational and one sub analysis of an RCT; n=16,081 (average age 49.5 years, female 53.3%). Five studies assessed second-line, seven studies assessed third+ line b/tsDMARDs. In all studies comparing first- and second-line, a reduced response was found in second-line. Responses varied from third-line onwards.

Psoriasis

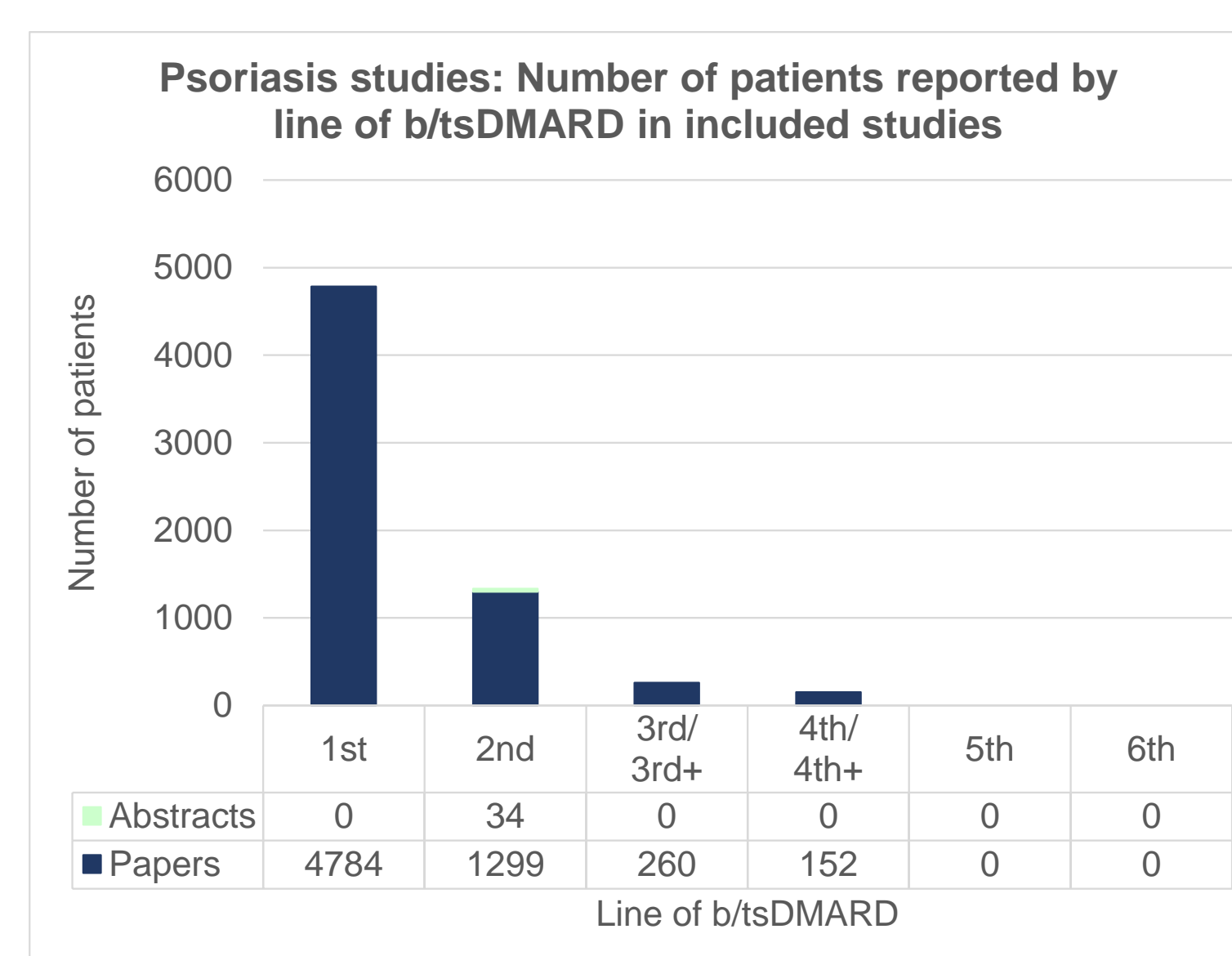
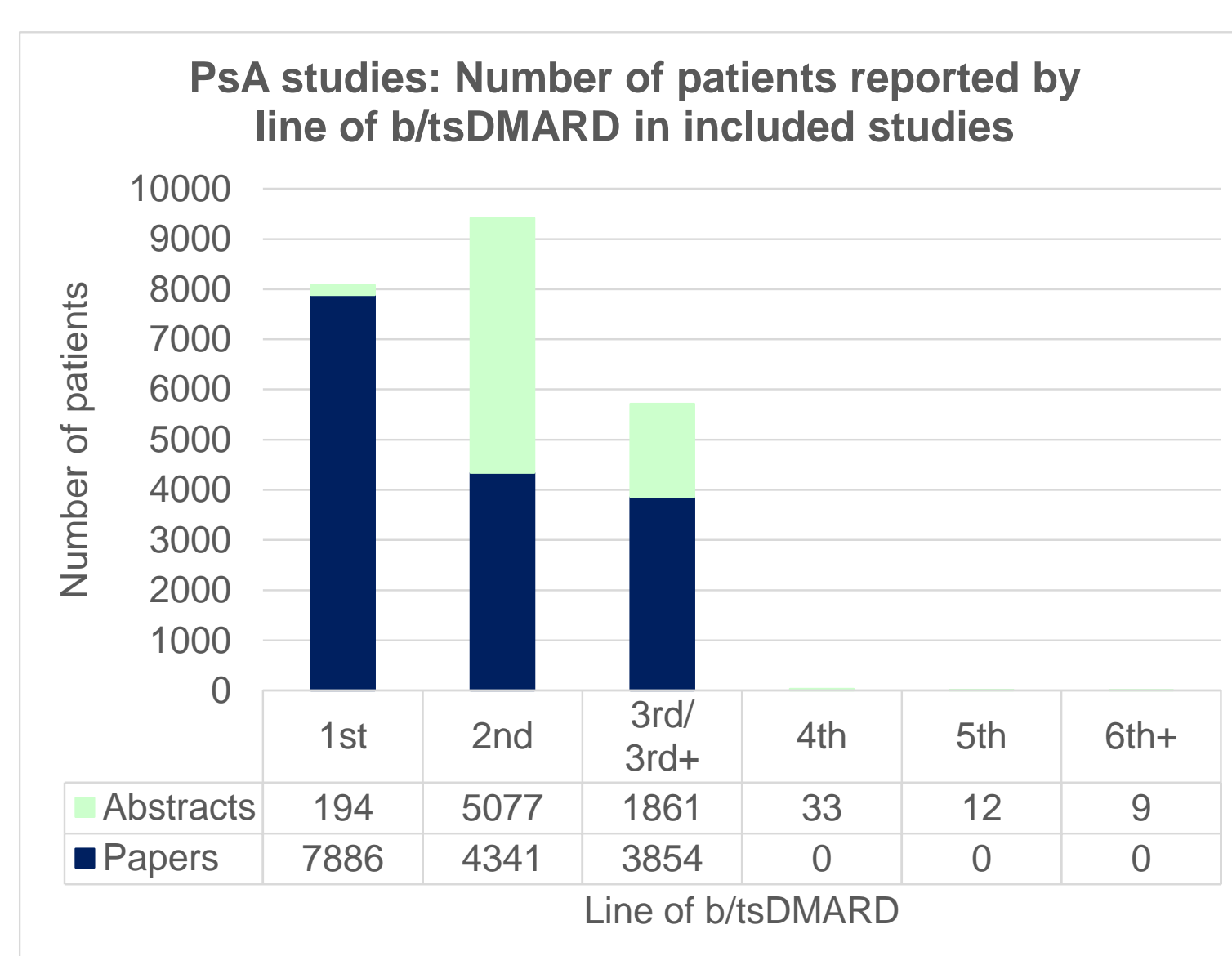
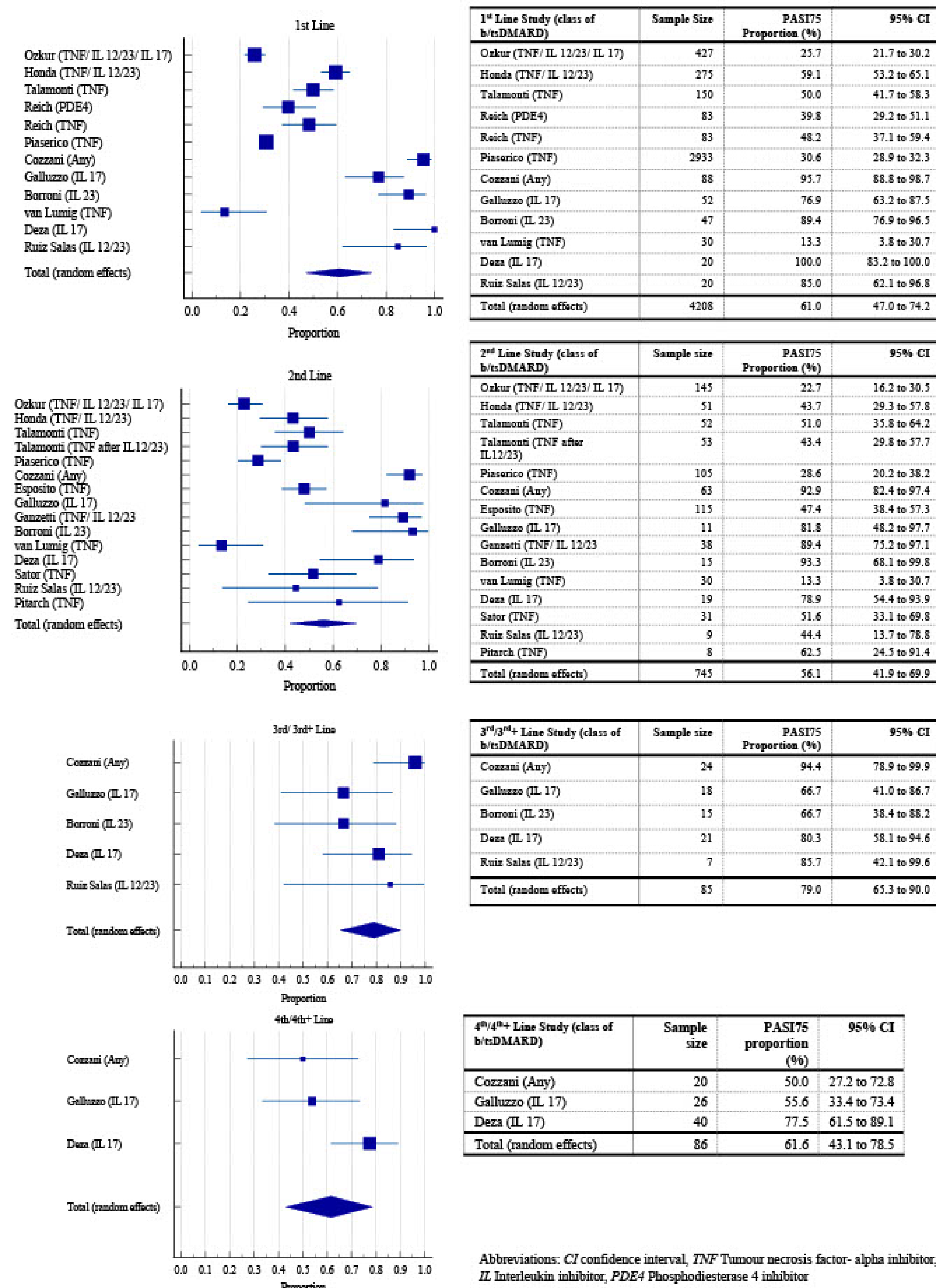
20 studies were included, 19 observational and one sub analysis of an RCT; n=6495 (average age 49.7 years, female 35.1%). 11 studies assessed second line b/tsDMARD, nine assessed third+ line. A meta-analysis of PASI75 at 12-16 weeks did not find a diminishment in effectiveness with sequential lines of b/tsDMARD.

Effectiveness of b/tsDMARDs in psoriatic arthritis reduces after first line.

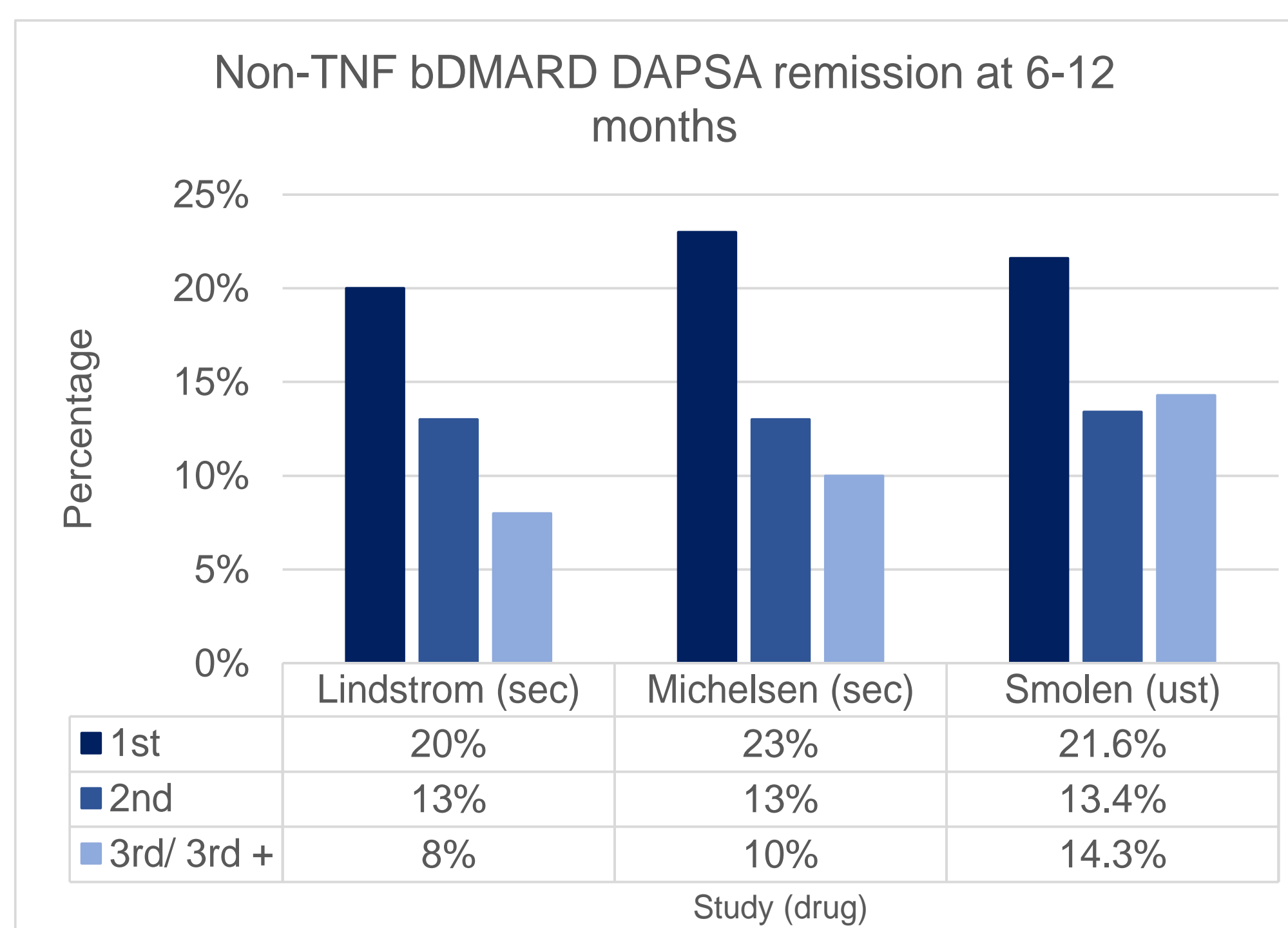
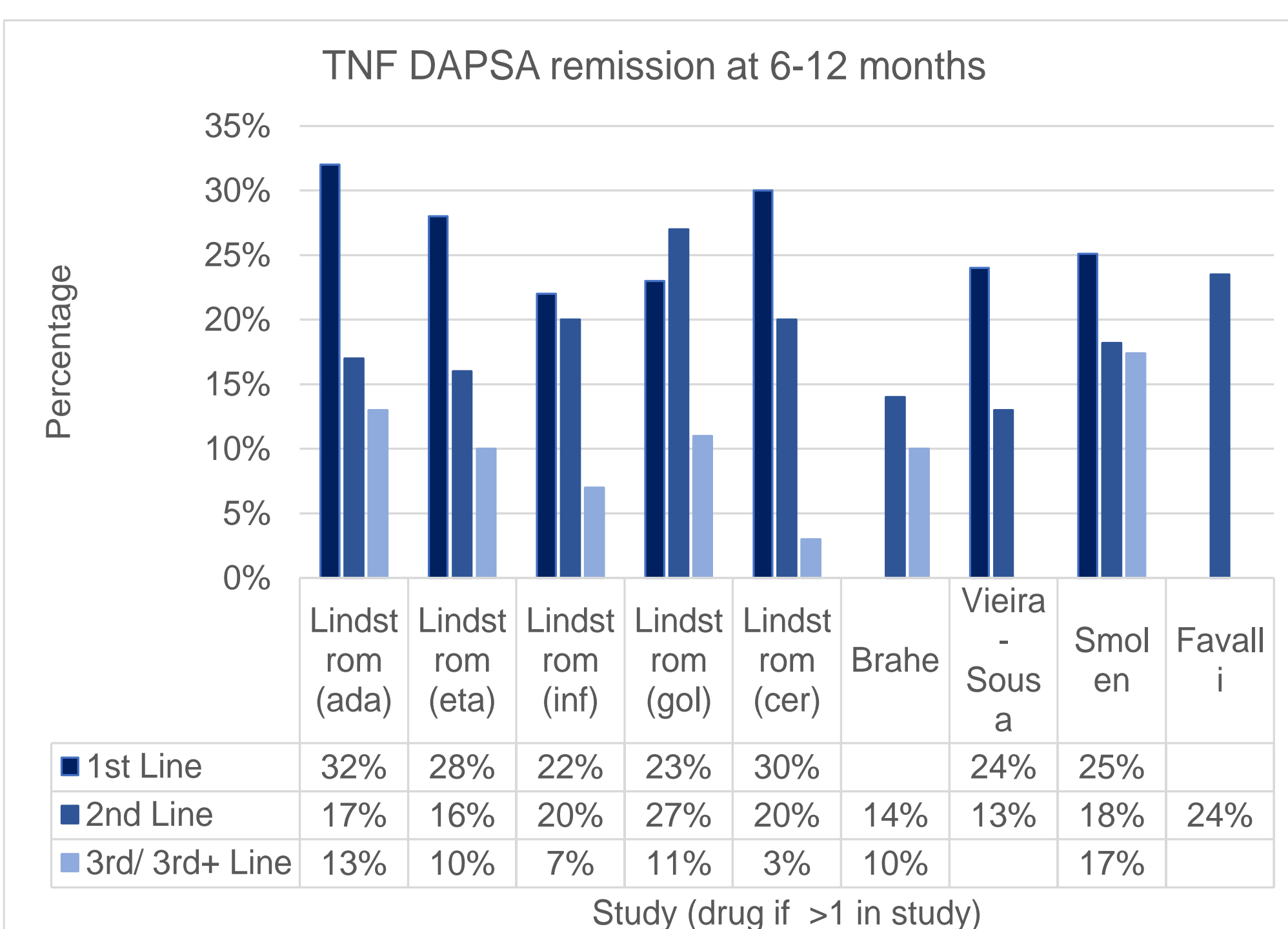
Effectiveness of b/tsDMARDs in psoriasis does not reduce with subsequent lines.

Current evidence is at high risk of bias, and there is very little available evidence beyond third line.

Meta-analysis of proportion of participants achieving PASI75 at 12-16 weeks with 1st, 2nd, 3rd and 4th line b/tsDMARDs



DAPSA remission at 6-12 months in 1st, 2nd and 3rd line b/tsDMARDs reported in included studies



Conclusions

- Current available evidence for effectiveness of second and beyond lines of b/tsDMARD in PsD is primarily observational and at high risk of bias
- There is very little evidence for effectiveness beyond second line in psoriasis and beyond third line in PsA
- On a case-by-case basis, there is evidence of potential benefit to patients in later lines of treatment
- Prospective studies are required to build an understanding of response to third+line b/tsDMARDs in PsD