Trends of Indirect Treatment Comparison Methods Use in NICE Technology Appraisals for Hematological Cancers

HTA154

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INTRODUCTION

- The NICE Health Technology Assessment (HTA) procedure has established the use of indirect treatment comparisons (ITC) to derive efficacy estimates in the absence of direct comparisons
- For haematological cancers (HC), such as leukaemia, lymphoma, or myeloma, there are often multiple treatment options available, including chemotherapy regimens, targeted therapies, immunotherapies, and stem cell transplantation
- However, conducting randomised controlled trials directly comparing all possible treatment combinations can be challenging, time-consuming, and costly

OBJECTIVE

- To understand the use of ITC methods in the NICE technology appraisals (TAs) for HCs, clinical data considered, and assess the Evidence Review Groups (ERGs) critiques

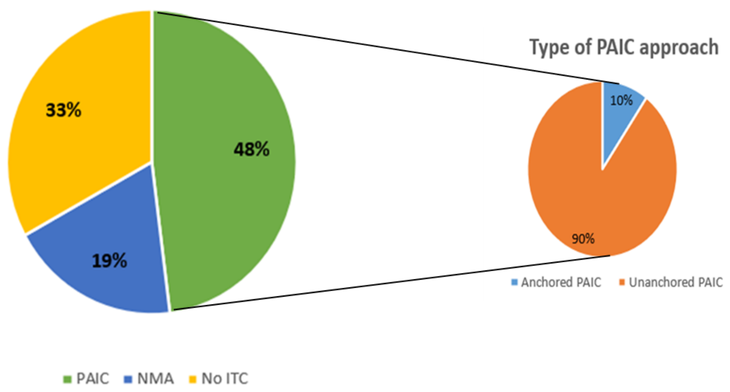
METHODS

- **N:** All HC TAs published by NICE between Jan 2019 to Jun 2023
- **Inclusions:** Final appraisal document, manufacturer submission and ERG report
- **Exclusions:** Terminated appraisals
- **Assessment criteria:** Use of ITC methods, clinical data considered, Evidence Review Groups (ERG) critique and final recommendations

RESULTS

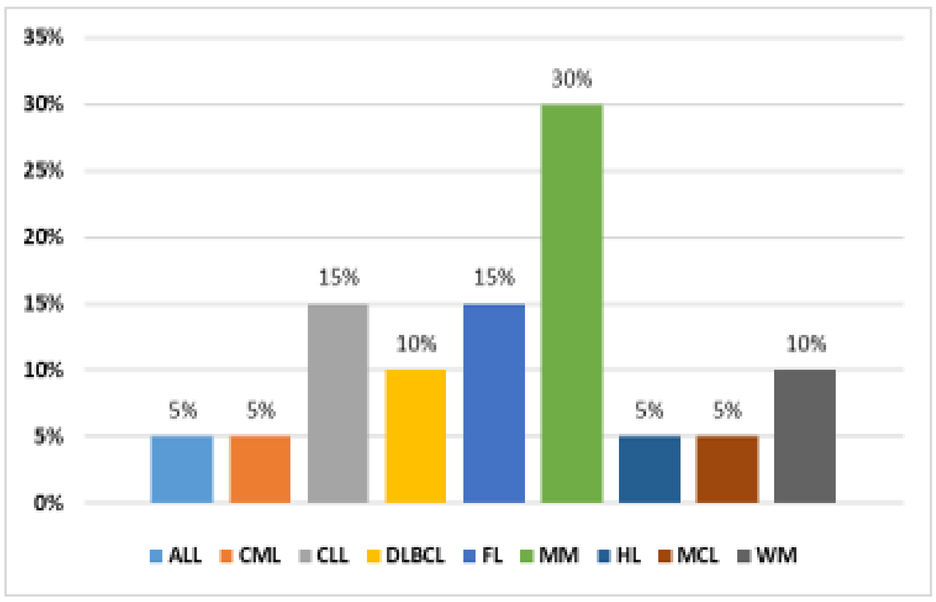
- Out of 42 HC TAs appraised by NICE, 48% included a PAIC and 19% included a network meta-analysis (NMA). Further, 90% of the population-adjusted indirect comparisons (PAIC) were unanchored while the remaining 10% used an anchored approach (Figure 1)

Figure 1. Type of ITC method used



- The main reason for conducting a PAIC was study/population heterogeneity (50%) or availability of only single arm trial data (35%)

Figure 2. PAIC submission disease wise

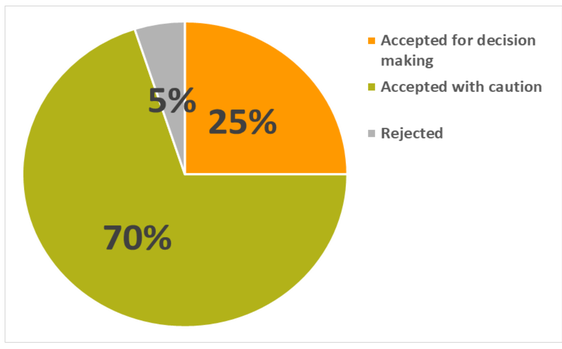


Abbreviation: ALL, acute lymphoblastic leukaemia; CML, chronic myeloid leukaemia; CLL, chronic lymphoblastic leukaemia; DLBCL, diffuse large B-cell lymphoma; FL, follicular lymphoma; MM, multiple myeloma; HL, Hodgkin's lymphoma; MCL; mantle cell lymphoma; WM, Waldenstrom's macroglobulinaemia.

- Of the total submissions that included a PAIC, majority were for multiple myeloma (30%) followed by chronic lymphocytic leukaemia and follicular lymphoma (15% each), DLBCL and Waldenstrom's macroglobulinaemia (10% each) (Figure 2)

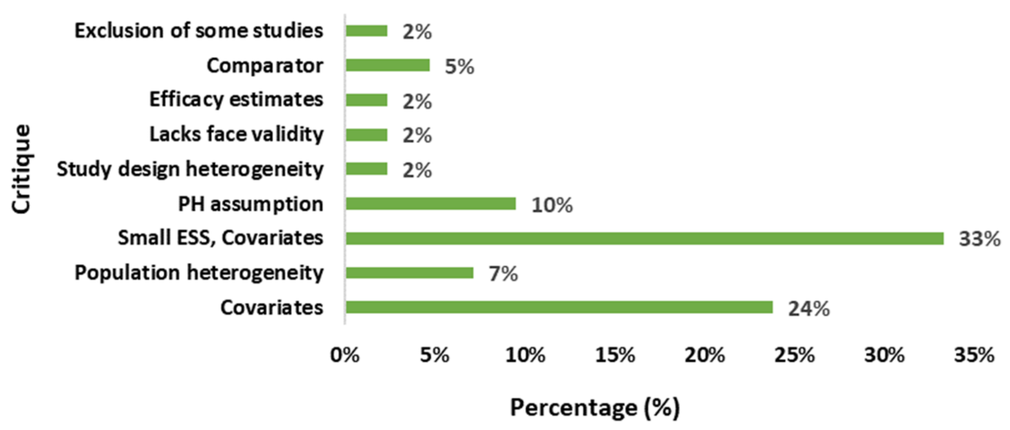
- NICE committee considered PAIC results appropriate for decision-making in 25% of submissions, accepted the results with caution due to high uncertainties in 70% submissions and rejecting the rest (Figure 3)

Figure 3. NICE critique on PAIC



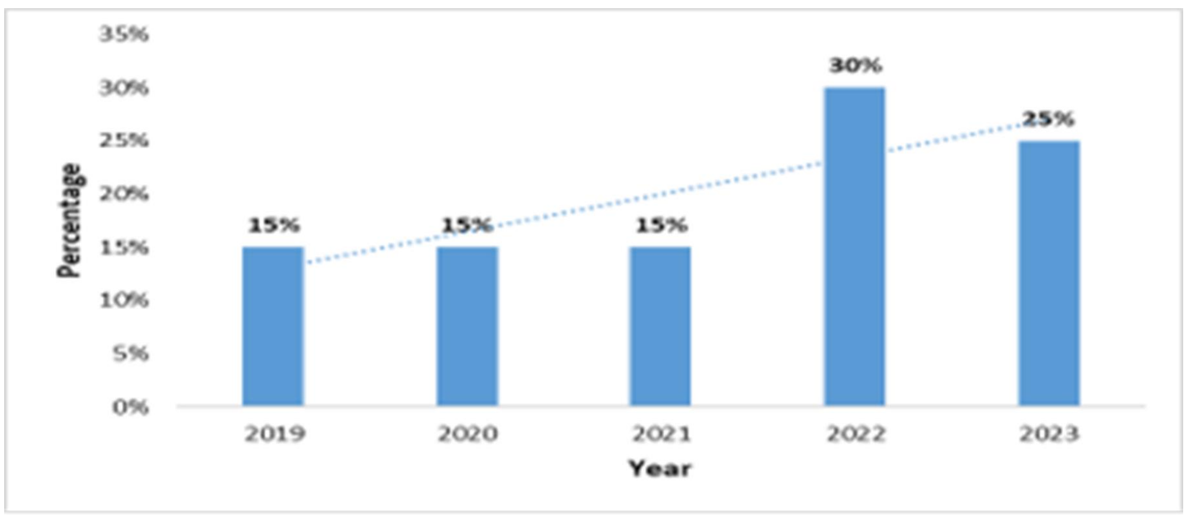
- The major criticism for MAIC was because of small effective sample size (33%) followed by covariates (24%) and proportional hazard assumption (10%) (Figure 4)

Figure 4. Key criticism of PAIC



- Simulated treatment comparison was used in one submission only, however, was not preferred by ERG. PAIC approach has increased from 15% of the total HC submissions to 30% in 2022 (Figure 5)

Figure 5. PAIC trends (2019-Q2 2023)



- While ERG acknowledged the inherent uncertainty of PAIC approach, it highlighted insufficient matching for effect modifiers in majority of the submissions and did not recommend 20% of these submissions due to high level of uncertainty in the clinical effectiveness results

CONCLUSION

- A trend was observed with increasing use of PAICs over the last 5 years in HC TAs which is likely due to the submissions being based on single arm trial data, increasing complexity of study design and population heterogeneity
- Improvement in methodology employed in the PAICs could improve chances of a positive recommendation by NICE

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None