Clinical Guideline

Rheumatoid Arthritis
Drug Treatment Pathway

Guideline Summary
This clinical guideline outlines the biologic treatment pathway for adult patients with rheumatoid arthritis.

South East London Integrated Medicines Optimisation Committee (SEL IMOC). A partnership between NHS organisations in South East London Integrated Care System: NHS South East London (covering the boroughs of Bexley, Bromley, Greenwich, Lambeth, Lewisham and Southwark) and GSTFT/KCH /SLaM/ Oxleas NHS Foundation Trusts/Lewisham & Greenwich NHS Trust.
Last reviewed and approved: November 2025 **Next review date:** November 2027 (sooner if evidence/practice changes)

Document Detail	
Document Type	Clinical Guideline
Document name	Rheumatoid Arthritis Biologic Drug Treatment Pathway
Document location	Intranet of Individual Trusts/SEL website
Version	Version 11
Effective from	November 2025
Review due date	November 2027 (or sooner if evidence/practice changes)
Owner	South East London Rheumatology Pathway Development Group
Author	**South East London Rheumatology Pathway Group**: Acute Trusts: **Guys and St Thomas' NHS Foundation Trust** Principal Pharmacist Immunotherapy (Rheumatology, Dermatology, Allergy) and Clinical Commissioning Highly Specialist Pharmacists Rheumatology Consultant Rheumatologist and Clinical Lead Rheumatology Advanced Nurse Specialist, Rheumatology **Kings College Hospital NHS Foundation Trust** Consultant Rheumatologist (Chair) Principal Pharmacist – Planned Medicine Specialist Pharmacist – Rheumatology Consultant Rheumatologist and Clinical Lead Rheumatology **Lewisham and Greenwich NHS Trust** Consultant Rheumatologist Clinical Nurse Specialist, Rheumatology Lead Pharmacist Long term Conditions **NHS South East London Integrated Care Board** (ICB) – covering the boroughs of: Bexley, Bromley, Greenwich, Lambeth, Lewisham and Southwark
Approved by date	Rheumatology Pathway Group: July 2025 SEL Integrated Medicines Optimisation Committee: November 2025
Superseded documents	Nil
Keywords	Rheumatoid, arthritis, biologic, adalimumab, certolizumab, etanercept, golimumab, infliximab, filgotinib, abatacept, rituximab, tocilizumab, baricitnib, tofacitinib, sarilumab, biosimilar, upadacitinib,

Change History		
Date	Change details, since approval	Approved by
3.11.16	Update of pre-biologic therapy definition, update of vaccination requirement, addition of free of charge schemes, addition of biologic choice in women planning pregnancy, revision of two flow diagrams of pathway treatment, addition of treatment options following multiple biologic failures, update of key performance indicators for annual audit	
09.12.16	14 - Golimumab 50mg twice monthly dosing statement added to notes box	
27.01.17	7 – added info on administration of vaccinations by early outpatient biologic initiation service	
27.01.17	11 – added info on administration of first dose biologic via OP clinic and VAT charge to commissioners	
08.03.17	5 & 8 – detail added re: STRAP trial	
October 2017	Addition of baricitinib and tofacitinib following positive NICE approval	
March 2018	Addition of subcutaneous methotrexate billing information, pre-biologic infection screen addition of quantiferon, Addition of sarilumab following positive NICE approval and update of NICE guidelines in references	Rheumatology sub-Group MPRG

Review History		
Date	Review details	Approved by
May - July 2019	Updated in line with pathway discussions at January 2019 and May 2019 meetings. Added Appendix 1 Best Value Biologic	MPRG, Aug 19
Dec 2020	Updated in line with pathway discussions at September 2020 and December 2020 meetings Updated Appendix 1 Best Value Biologic cost tool, updated with Upadacitinib following NICE	
March 2021	Addition of Filgotininb as treatment option following NICE guidance. Update of treatment options for moderate disease, updated Appendix 1 Best value biologic tool	
July 2021	Update of moderate disease management in line with NICE TA 375 July 2021, updated Appendix 1 Best value biologic tool	

March 2022	Update of moderate disease management in line with NICE TA 744 November 2021, updated Appendix 1 Best value biologic tool, addition of MHRA safety warning section, Shingrix® vaccine information updated and updated contents page	
September /October 2022	Updated notes in section 16 for infliximab subcutaneous availability. Updated Appendix 1 best value biologic tool. Updated group members. References to "CCG" updated to "ICB" (Integrated Care Board In section 15, reference to B* forms removed and amended to the outcomes monitoring framework	
Sep 2024	Pregnancy/breastfeeding section updated	
July 2025	Update to Interstitial lung disease (ILD) section in line with the American College of Rheumatology (ACR) guideline for the treatment of ILD in people with systemic autoimmune rheumatic diseases, tocilizumab and JAK inhibitors have been included as second line treatment options alongside abatacept. Notes section updated to note the use of the abatacept in this setting.	

Contents

1. Scope

This treatment pathway applies to adult patients with a diagnosis of moderately active rheumatoid arthritis (DAS28 ≥3.2) and highly active rheumatoid arthritis (DAS 28 > 5.1) who are approaching treatment with biologic therapy.

2. Rationale

This treatment pathway provides an evidence based approach for the treatment of rheumatoid arthritis whilst maximising cost effectiveness and clinical outcome.

3. Principles

This treatment guideline is based on current available national guidance (National Institute for Health and Care Excellence, NICE), locally approved guidance and is subject to frequent change as guidance is updated and costs change.

This pathway is correct at the time of publication. NICE Technology Appraisals (TAs) relating to Rheumatoid Arthritis in adults which are published after the approval date of this guideline will be commissioned no later than 90 days (30 days for fast track TAs) from publication in line with the TA recommendations.

4. Definitions

EULAR Response Criteria for Severe Rheumatoid arthritis:

DAS28 Improvement →	> 1.2	> 0.6 and ≤ 1.2	≤ 0.6
Present DAS 28 ↓			
≤ 3.2	good response	moderate response	no response
> 3.2 and ≤ 5.1	moderate response	moderate response	no response
> 5.1	moderate response	no response	no response

Primary failure – patient does not respond after 6 months treatment (3 months for certolizumab pegol) – refer to section 17 or 18.

Secondary failure – patient initially achieves a good or moderate response after 6 months but this is not sustained resulting in failure to maintain a reduction of 1.2 points or more - refer to section 17 and 18.

For moderate disease see section 15 for EULAR response criteria.

5. Pre-biologic therapy [disease modifying anti-rheumatic drugs (DMARDs)]

5.1. Pre-biologic therapy

Persistent Active Rheumatoid Arthritis
(DAS 28 ≥3.2)
+
Failure of intensive therapy with a combination of two or more conventional DMARDs

Strategies for maximising the use of DMARDs prior to biologic therapy:

- Adjusting folic acid dose/frequency/formulation to improve tolerance to oral methotrexate (e.g. folic acid liquid 1mg daily except day of methotrexate)
- Subcutaneous methotrexate where clinically appropriate (e.g. gastrointestinal adverse effects with oral methotrexate or poor compliance) When used in this situation, billable to ICBs for approved indications in line with the ICB high cost drugs policy and ICB commissioned drug list. Whilst the majority of dispensing will be via homecare, commissioners have agreed that there may be exceptional circumstances where homecare may not be possible (e.g. due to patient circumstances or to cover initiation doses) and these can be billed.
- Maximum intensification of combination therapy, for example:
    - Has maximum tolerable dosage been achieved?
    - Has triple DMARD therapy been considered (unless contraindicated)?

5.2. In combination with biologics

Where patients are intolerant of methotrexate or methotrexate is considered inappropriate, other DMARDs may be used in combination with biologics although this combination may be considered 'off-label'.

If subcutaneous methotrexate has been initiated to enhance efficacy and patients are then started on a biologic medication, the route of methotrexate should be reviewed and de-escalated where possible to oral therapy.

6. Pre-biologic Infection screen

- TB (T spot or quantiferon and chest x-ray)
- Viral serology: hepatitis B, C and HIV as clinically appropriate

7. Vaccinations (click for Department of Health and Social Care Green Book)

- Patients should be counselled on the need to **avoid live vaccines** and the implication that may have for travelling**. To avoid inadvertent administration of live vaccines, on receipt of clinic letters GPs should update practice records to indicate the patient is currently receiving biologic treatment.**
- Patients should receive annual influenza vaccine and pandemic influenza vaccine when recommended, and pneumococcal vaccination prior to biologic therapy. This can be prescribed and administered in the community or by the hospital as part of an outpatient biologic initiation service. **GPs must be informed if the hospital administers to outpatients.**
- Patients should be offered the COVID-19 vaccine in line with the Department of Health and Social Care green book guidance.
- Eligible patients may be offered vaccination against shingles (herpes zoster vaccine) in line with Department of Health and Social Care guidelines. Two preparations are available: Shingrex® (non-live vaccine) and Zostavax® (live vaccine). The live vaccination (Zostavax®) **must not be administered** to patients who are prescribed/ have recently stopped biologics, JAK inhibitors, some of the conventional DMARDs or who are on certain doses of corticosteroid. Refer to the Department of Health and Social Care website for full information, including eligibility criteria and the confirmation as to whether the patient should receive the live or non-live vaccine preparation.

Patients initiated on Janus kinase (JAK) inhibitors should be counselled on the risk of shingles. Patients should be advised to contact their GP urgently if infection is suspected for initiation of aciclovir treatment. The Rheumatology team should inform the GP in writing of the initiation of a JAK inhibitor and advise them of the need for urgent aciclovir treatment in the event of shingles. Current management of patients due to start JAK inhibitors does not include the routine administration of the varicella zoster virus vaccination. Patients who are

eligible for the vaccine should be counselled that they should have the vaccine prior to initiation of biologic therapy, if not already done so. This should be documented in communication to the GP and patient.

8. Recruitment into clinical trials

Where possible, patients should be invited to participate in clinical trials being undertaken within rheumatology departments. Where a clinical trial does not meet the requirements of the pathway approval should be obtained from commissioners prior to initiation.

STRAP (Stratification of Biologic Therapies for RA by Pathobiology) is a Medical Research Council funded multi-centre phase III randomised, open-label, biopsy-driven stratification trial in DMARD inadequate responders, fulfilling NICE criteria to commence biological therapy. It aims to identify treatment response predictors which will allow the stratification of patients to the biological therapy they are most likely to respond to.

9. Free of Charge Schemes

New biologic and non-biologic DMARDS are often licensed and made commercially available many months before NICE are due to issue their NICE Technology Appraisal Guidance. Where this situation exists, individual rheumatology departments may enter discussions with the pharmaceutical company to determine if a 'free of charge' (FOC) early access scheme is feasible.

When a FOC is proposed it must satisfy the following criteria:

- The scheme must not replace or override the agreed pathway and the FOC drug should only be considered if pathway options are exhausted or not clinically appropriate
- The medication must be funded at zero cost to the commissioners or negligible cost to the NHS trust up to and for 90 days after the positive NICE Technology Appraisal Guidance is issued and formally commissioned
- The pharmaceutical company must continue to fund treatment in the event of a negative NICE Technology Appraisal Guidance until
    - 90 days after a future positive NICE Technology Appraisal Guidance
    - Until the rheumatologist considers it no longer clinically appropriate to continue the drug
- All schemes require sign off in each NHS Trust and this usually requires the Chief Pharmacist, the Pharmacy Procurement Lead and Director of Finance to authorise the scheme.

10. Extended interval dosing ('off-label' indication) and biologic withdrawal in remission

After discussion with the patient a Consultant may decide to extend the dosage interval or withdraw biologic therapy completely as appropriate for the clinical situation. This may require the use of ultrasound to confirm if patient is in remission. If patients flare following extension in dose interval or withdrawal; re-initiation of the previous biologic at the same dosage regimen is acceptable but consider using an alternative agent due to immunogenicity. Whilst a patient maintains remission or low disease activity on an extended dose interval, the Trust can recover a share of the savings from the commissioner. This is subject to local discussion and contractual agreement.

11. Method of medication supply

Subject to local arrangements patients may be offered a choice of method of supply. This may include a traditional homecare service or enhanced outpatient pharmacy service via outsourced outpatient pharmacies on main hospital sites. Where there is agreement with pharmaceutical companies, unbundling of homecare and direct procurement via outsourced pharmacies may result in a reduction in the drug acquisition cost. This may further influence the biologic choice at local trust level.

In order to reduce the time to biologic initiation, the first biologic doses (2 – 4 weeks supply) may be given in clinic as part of an outpatient biologic initiation service. This provides sufficient supply, improved patient training and assessment in clinic prior to initiation on homecare. As the first dose(s) are administered in the outpatient clinic, the cost will incur VAT and this will be passed onto commissioners.

12. Biologic choice in patients unable to take methotrexate (MTX, oral and subcutaneous)

The majority of patients commencing biologics are on concurrent methotrexate. However, for the minority who are not, the chances of a meaningful response to therapy are lower. Between 10 – 37% of patients discontinue methotrexate due to adverse effects[13] and data from the British Society of Rheumatology Biologics Register indicate that approximately a third of patients take biological disease modifying anti-rheumatic drugs as monotherapy[14].

13. Biologic choice in women planning pregnancy

If established on a tumour necrosis factor α (TNF) inhibitor (Infliximab, Adalimumab, Etanercept and Golimumab) women planning pregnancy with no or low disease activity do not need to be switched to Certolizumab pegol. All TNF inhibitors are compatible with all three trimesters of pregnancy.

Certolizumab pegol does not require any alteration to the infant's vaccination schedule as has reduced placental transfer when compared with other TNF inhibitors. In women with low risk of disease flare, the full term infant can have a normal vaccination schedule including rotavirus vaccination if treatment is stopped as follows:
Infliximab - 20 weeks
Adalimumab – 28 weeks
Golimumab - 28 weeks
Etanercept - 32 weeks

If a clinical decision is made to continue Infliximab, Adalimumab, Golimumab or Etanercept to maintain disease control then live vaccines should be avoided in infants until they are 6 months of age.

All TNF inhibitors should be stopped approximately 2 weeks before the expected delivery date of the baby and restarted once fully healed from any pregnancy trauma or surgical intervention. If the delivery occurs before the expected delivery date the TNF inhibitor should be stopped and restarted once fully healed from any pregnancy trauma or surgical intervention.

All TNF inhibitors can be used when breastfeeding.

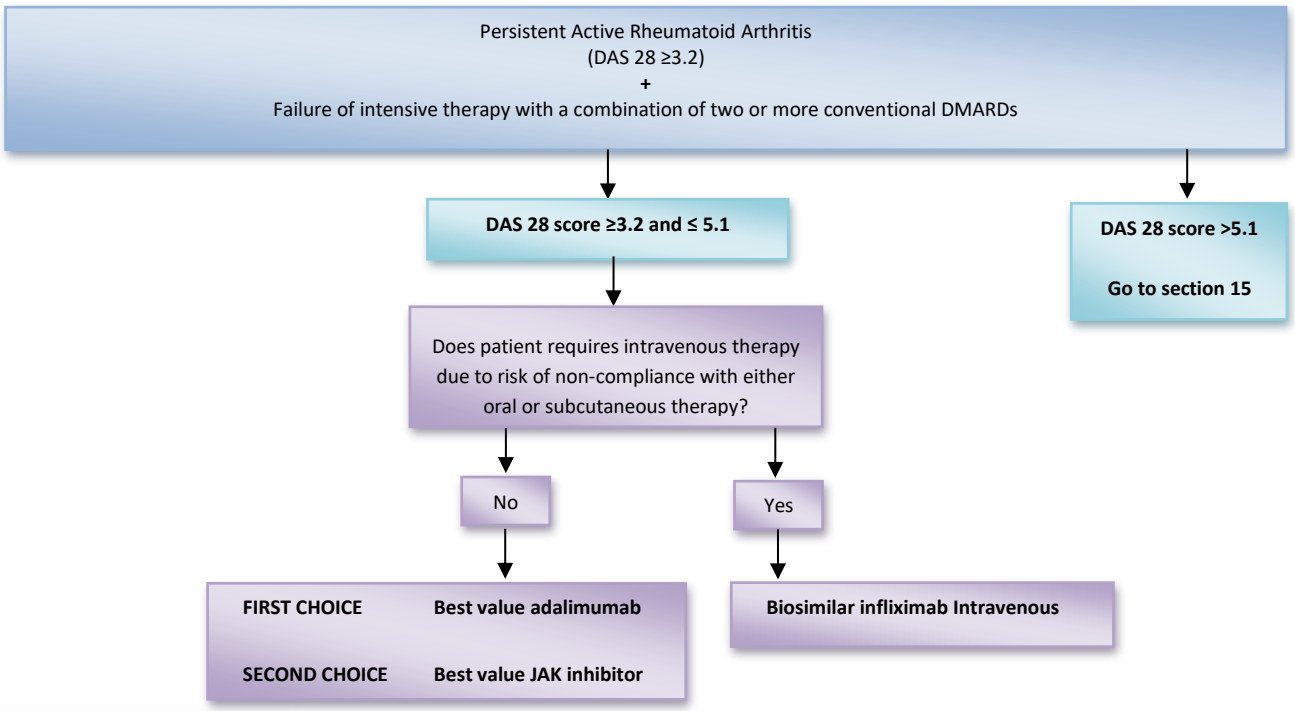
This guidance is based on the British Society for Rheumatology (BSR) guideline on pregnancy and breastfeeding and may deviate from information provided in the individual summary of product characteristics (SmPC). For other biologic drugs or DMARD choice in pregnancy or breast feeding, please refer to the BSR https://www.rheumatology.org.uk/guidelines. It is recommended that decisions are made based on individual patient factors in combination with the patients Consultant Rheumatologist and Obstetrician.

14. MHRA drug safety updates

Some of the drugs included in this pathway are subject to MHRA drug safety updates which should be taken in to account by the prescriber when initiating or switching therapy. Further information can be found on the MHRA website: https://www.gov.uk/drug-safety-update

The following section 15 is applicable to patients with moderate disease activity - baseline DAS 28 score ≥3.2 and ≤ 5.1

15. Biologic choice in patients with moderate disease DAS 28 score 3.2 - 5.1



Assess response at 6 months

EULAR Response Criteria

Adequate response - Reduction of DAS 28 score > 0.6 compared to baseline

- Continue treatment and assess response every 6 – 12 months

Inadequate response or adverse effect - Reduction of DAS 28 score ≤ 0.6 compared to baseline

- Switch to alternative agent (ideally different mode of action)

If DAS 28 score > 5.1 – go to section 15

NOTES

1. If unable to self-inject but history of good compliance with oral therapy use filgotinib (1st line best value JAK inhibitor or upadacitinib (2nd line), (only JAK inhibitors that are NICE approved for moderate RA).
2. Etanercept biosimilar may be more preferable than adalimumab biosimilar if patient is a high risk of infection or a shorter half-life is required. Upadacitinib may be more preferable than filgotinib in severe renal disease or due to potential drug interactions.
3. It is preferable where there is no contra-indication or intolerance to use methotrexate alongside the biologic, if this is not possible monotherapy can be used with the biologic. It is noted that the use of Infliximab biosimilar as monotherapy for moderate disease is not in line with NICE guidance but is supported by this pathway. Patient numbers will be reported via an audit to the Rheumatology SEL pathway group.
4. The second choice agent should be used if there are patient contra-indications or specific clinical factors that make it preferable to than the first choice option. Refer to appendix 1 best value biologic tool.
5. See Best Value Biologic table in **Appendix 1** for further information on drug selection in moderate disease cohort.
6. Abatacept is not recommended by NICE or routinely commissioned in SEL for moderate disease. Submission of an Individual Funding Request will be required.

For patients that respond initially to their first line biologic but have secondary failure after six months of treatment the patient is eligible to switch to an alternative therapy in line with the pathway above. There may be a small number of patients with moderate disease that fail to respond to two different biologics who will need to progress to section 18 of this pathway.

The following sections 16-19 are applicable for patients with baseline DAS 28 scores > 5.1 (highly active disease)

16. Initiation of first biologic [1,2,4,5,7,19,20,21]

Cautions or contraindication to anti-TNF drugs?

E.g. recent solid tumour (< 5 years), history of melanoma, multiple sclerosis, autoimmune rheumatic lung disease, ILD, septic arthritis < 12 months, heart failure NYHA III/IV

→ Yes → Go to 17

Consideration of patient factors

Is a shorter half-life required? For example (but not limited to) history of TB, infections requiring hospitalisation[1], co-morbidities or other patient factors (e.g. diabetes, COPD, concurrent corticosteroid use). See notes below
Is STRAP information available? If so see STRAP protocol

→ Yes

FIRST CHOICE	Biosimilar etanercept
SECOND CHOICE	Subcutaneous Abatacept If patient requires intravenous route – **Abatacept intravenous**

↓ No

Does patient requires intravenous therapy due to risk of non-compliance?

→ Yes

FIRST CHOICE	**Biosimilar Infliximab Intravenous**
SECOND CHOICE	**Tocilizumab or Abatacept Intravenous**

↓ No

FIRST CHOICE	**Best value Adalimumab**	**(see Appendix 1 for best value tool)**
SECOND CHOICE	Choice of best value Etanercept or best value Oral Janus Kinase inhibitor	
THIRD CHOICE	Choice of best value subcutaneous anti IL-6 inhibitor OR abatacept	

NOTES

1. If unable to administer subcutaneous injection or history of poor compliance use intravenous formulation.
2. Avoid sarilumab or tocilizumab (IL-6 inhibitor) if history of diverticulitis or intestinal ulceration
3. Baricitinib , filgotinib, tofacitinib and upadacitinib (oral JAK inhibitor) are options when an oral agent is preferred to improve compliance and concordance. Filgotinib is the best value JAK inhibitor.
4. It is preferable where there is no contra-indication or intolerance to use methotrexate alongside the biologic, if this is not possible a licensed monotherapy agent should be used.
5. The second choice agent should be used if there are patient contra-indications or specific clinical factors that make it more preferable than first choice options
6. See best value biologics table in **appendix 1** for further information on drug selection.
7. Subcutaneous infliximab is approved in SEL for management of RA – patients established on IV therapy for RA should be reviewed for appropriateness to switch formulation. For further information please see: South East London Joint Formulary

Assess response at 6 months

EULAR Response Criteria

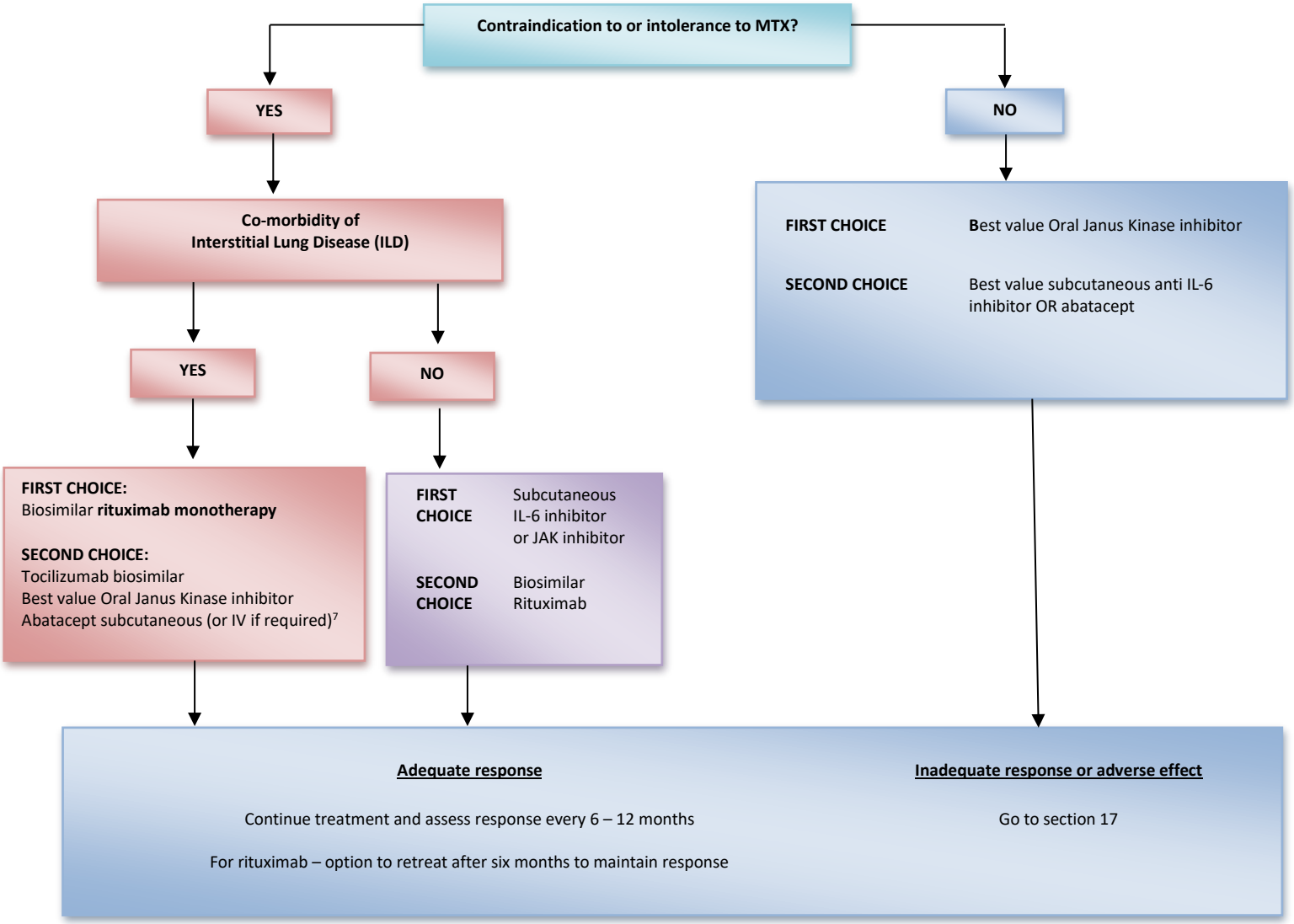
Moderate: DAS 28 3.2 – 5.1
Good: DAS28 ≤ 3.2

If moderate or good EULAR response not achieved at 6 months go to section 16 or trial of second anti-TNF.

Continue to reassess response every 6 – 12 months if moderate or good response achieved and consider dose optimisation /withdrawal (see section 10)

If minor adverse effects (e.g. injection site reactions) develop at any time or initial response is not sustained (secondary failure) go to section 17. Wherever possible use biologic in combination with methotrexate (including subcutaneous if necessary) to maximise efficacy

17. Initiation of first biologic (anti-TNF contraindicated) OR primary failure* with first anti-TNF[5,7,19,20,21] (*defined as no patient response after 6 months treatment [3 months for certolizumab pegol] see section 4)



NOTES

1. Intravenous route ONLY if unable to administer subcutaneous injection or history of poor compliance with oral or subcutaneous medication
2. Avoid sarilumab or tocilizumab (IL-6 inhibitor) if history of diverticulitis or intestinal ulceration
3. It is preferable where there is no contra-indication or intolerance to use methotrexate alongside the biologic
4. Baricitinib, filgotinib, tofacitinib and upadacitinib (oral JAK inhibitor) are options when an oral agent is preferred to improve compliance and concordance
5. The second choice agent should be used if there are patient contra-indications or specific clinical factors that make it more preferable than first choice options, this includes preference for abatacept in patients with high infection risk
6. See best value biologics table in **appendix 1** for further information on drug selection
7. Abatacept. Studies suggest no worsening of ILD with abatacept, and discontinuation because of ILD is not necessary, but efficacy of abatacept for ILD is uncertain.

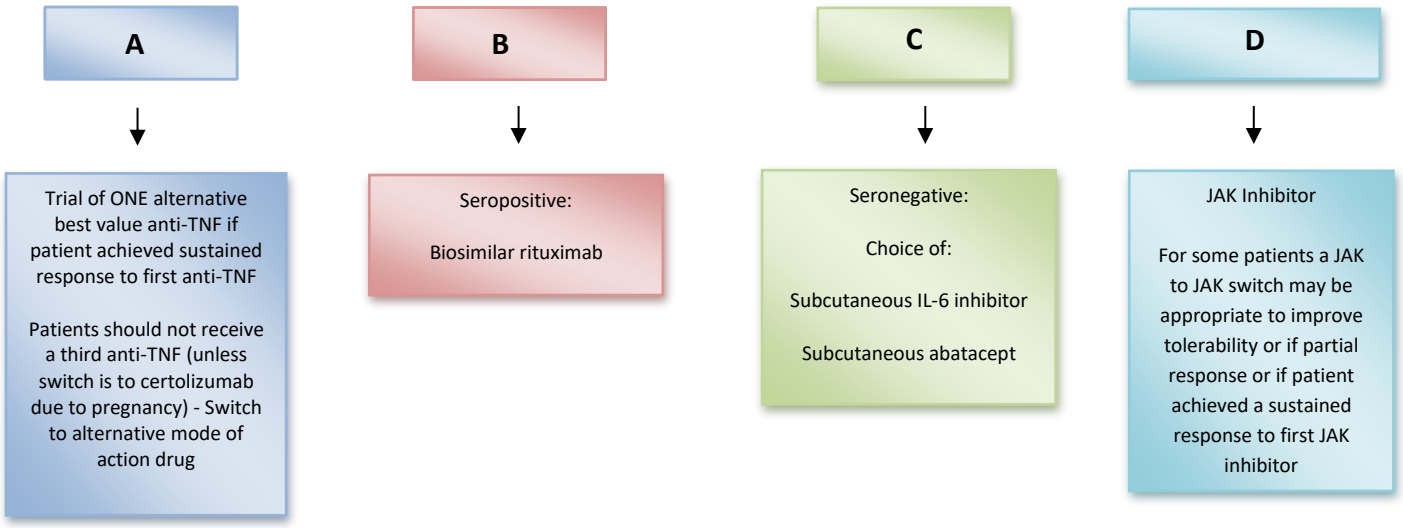
18. Secondary Failure or minor adverse effects (e.g. injection site reactions) with first treatment

Patients may be eligible for a number of treatments following section 16 and 17. Drug choice is based on clinician judgement. All treatment switches should be discussed via a Rheumatology MDT discussion. Where clinically appropriate the best value biologic should be used. In addition, patient factors that may influence drug choice may include infection risk, preference for oral treatment, frequency of hospital visits and administration device.

Following failure of a second line option the patient may receive a further number of drug switches as per options A-D below.

If all therapeutic options (A – D) are exhausted patients should proceed to section 19 of the pathway.

Treatment options:



DAS 28 measured at 12 - 24 weeks. Continue if adequate response and reassess every 24 - 52 weeks. If possible use biologic in combination with methotrexate (oral or subcutaneous) to maximise efficacy. Where methotrexate cannot be used, alternative DMARD(s) should be used.

Adalimumab subcutaneous is usually used at a frequency of alternate weekly. Dose escalation of adalimumab biosimilar to a weekly dose is approved by NICE for the treatment of Rheumatoid arthritis in monotherapy patients[5]. For patients who have an initial response at six months (DAS reduced by 1.2 or more) but go onto have a reduced response to treatment after this time the dose may be escalated to weekly instead of switching the drug to an alternative therapy. This should be reviewed in line with section 20.

19. Treatment options in moderate and severe rheumatoid arthritis following multiple biologic treatment failures including where biologics are contraindicated, not tolerated or in cases of hypersensitivity.

For a small number of patients all pathway therapeutic options may be exhausted. The following is recommended for this patient cohort:

- Consultant rheumatologist to determine if active synovitis present (if in any doubt ultrasound should be considered)
- Consider novel agents if accessible via clinical trials or free of charge patient access schemes
- Revert back to biologic that delivered best clinical outcomes or use alternative biologic in same mode of action class with lowest acquisition costs that is approved for the disease severity (i.e moderate or severe) (see best value biologic table Appendix 1).
    - Decision should be made in a Multidisciplinary Team (MDT) discussion in the local rheumatology department
    - Clinical outcomes will be reported in line with the outcomes monitoring framework.
    - Include current corticosteroid dose or use of methylprednisolone in previous 6 – 12 months
    - Measure disease scores e.g HAQ, DAS

20. Monitoring adherence with the guideline

Adherence to this pathway will be reviewed using the SEL Rheumatology Pathways, Outcomes and Monitoring Framework which includes Key Performance Indicators agreed by South East London Integrated Medicines Optimisation Committee. The Rheumatology and Pharmacy Departments may undertake separate clinical audits as part of their annual clinical audit plan.

21. Supporting documents (see relevant local guidelines)

- Protocol for administration and reducing infusion times of infliximab in adult rheumatology patients with rheumatoid arthritis, psoriatic arthritis or ankylosing spondylitis.
- Protocol for the use of self-administered sub-cutaneous methotrexate injection (Metoject) in adult patients with rheumatoid arthritis.
- Protocol for the use of rituximab for the treatment of autoimmune rheumatic diseases (including rheumatoid arthritis) in adults.

References

1. Mercer S. Guys and St Thomas' NHS Foundation Trust. Clinical Guideline. Rheumatoid Arthritis
2. Biologic Treatment Pathway (version 6)
3. NICE Technology appraisal guidance TA 130 Adalimumab, etanercept and infliximab for the treatment of rheumatoid arthritis Includes a review of technology appraisal guidance 36. October 2007.
4. The National Collaborating Centre for Chronic Diseases. NICE Rheumatoid Arthritis National clinical guideline for management and treatment in adults. February 2009.
5. NICE Technology appraisal guidance TA 186 Certolizumab pegol for the treatment of rheumatoid
6. arthritis. February 2010.
7. NICE Technology appraisal guidance TA 195 Adalimumab, etanercept, infliximab, rituximab and abatacept for the treatment of rheumatoid arthritis after the failure of a TNF inhibitor. Part review of NICE technology appraisal guidance 36. Review of NICE technology appraisal guidance 126 and 141. August 2010.
8. NICE Technology appraisal guidance TA 234 Abatacept for the treatment of rheumatoid arthritis after the failure of conventional disease-modifying anti-rheumatic drugs. August 2011.
9. NICE Technology appraisal guidance TA 247 Tocilizumab for the treatment of rheumatoid arthritis (rapid review of technology appraisal guidance 198). February 2012.
10. Gout T, Östör AJ, Nisar MK. Lower gastrointestinal perforation in rheumatoid arthritis patients treated with conventional DMARDs or tocilizumab: a systematic literature review. Clinical Rheumatology 2011 Nov; 30(11):1471-4.
11. Gullick N, De Silva C, Kirkham B. Switching between TNFL inhibitors for Rheumatoid Arthritis in clinical practice: does the reason for switching matter? [Short report].
12. Gullick N, De Silva C, Kirkham BW. Switching TNF-alpha antagonists in primary or secondary non- responders. Ann Rheum Dis. 2011; 70(suppl 3):415.
13. Medicines Q&As 84.2 What is the dose of folic acid to use with methotrexate therapy for rheumatoid arthritis? www.nelm.nhs.uk accessed 10th October 2012.
14. NICE Technology appraisal guidance TA 280 Abatacept for treating rheumatoid arthritis after the failure of conventional disease-modifying anti-rheumatic drugs (rapid review of technology appraisal guidance 234).
15. Salliot C, van der Heijde D. Long-term safety of methotrexate monotherapy in patients with rheumatoid arthritis: a systematic literature research. *Ann Rheum Dis* 2009; 68: 1100-1004.
16. Soliman MM, Ashcroft DM, Watson KDm et al. Impact of concomitant use of DMARDs on the persistence with anti-TNF therapies in patients with rheumatoid arthritis: results from the British Society of Rheumatology Biologics Register. *Ann Rheum Dis* 2011; 70: 583-89.
17. Gabay C, Emery P, van Vollenhoven R et al. Tocilizumab monotherapy versus adalimumab monotherapy for treatment of rheumatoid arthritis (ADACTA): a randomised, double-blind, controlled phase 4 trial. *Lancet* 2013; 381 (9877): 1541-1550.
18. Flint J, Panchal S, Hurrell A et al. BSR and BHPR guideline on prescribing drugs in pregnancy and breast feeding – Part I: standard and biologic disease modifying anti-rheumatic drugs and corticosteroids. *Rheumatology* first published online January 10, 2016 doi: 10.1093/rheumatology/kev404
19. NICE technology appraisal guidance TA 375 Adalimumab, etanercept, infliximab, certolizumab pegol, golimumab, tocilizumab and abatacept for rheumatoid arthritis not previously treated with DMARDs or after conventional DMARDs only have failed. January 2016.
20. Subesinghe S, Whittaker M, Galloway J. Mitigating infection risk with immunotherapy for rheumatoid arthritis. International Journal of Clinical Rheumatology 2015; 10(3), 177-193.
21. NICE Technology appraisal guidance TA 485 Sarilumab for moderate to severe rheumatoid arthritis. November 2017
22. NICE Technology appraisal guidance TA 466 Baricitinib for moderate to severe rheumatoid arthritis. August 2017
23. NICE Technology appraisal guidance TA 480 Tofacitinib for moderate to severe rheumatoid arthritis. October 2017
24. NICE Technology appraisal guidance TA 665 Upadacitinib for treating severe rheumatoid arthritis. December 2020
25. NICE Technology appraisal guidance TA 676 Filgotinib for treating moderate to severe rheumatoid arthritis. February 2021.
26. NICE Technology appraisal guidance TA 715 Adalimumab, etanercept, infliximab and abatacept for treating moderate rheumatoid arthritis after conventional DMARDs have failed. July 2021
27. British Society of Rheumatology guidelines part 1 and 2 on prescribing drugs in pregnancy and breastfeeding, available via: https://www.rheumatology.org.uk/guidelines. (Last accessed August 2024)
28. Johnson SR, Bernstein EJ, Bolster MB, Chung JH, Danoff SK, George MD, Khanna D, Guyatt G, Mirza RD, Aggarwal R, Allen Jr A. 2023 American College of Rheumatology (ACR)/American College of Chest Physicians (CHEST) guideline for the treatment of interstitial lung disease in people with systemic autoimmune rheumatic diseases. Arthritis & rheumatology. 2024 Aug;76(8):1182-200.

Consultation Process for current version:

South East London Rheumatology sub-Group: consultation and approval: July 2025

Appendix 1: Best value biologics cost tool - Rheumatoid arthritis

Drug	Mode of action	Route of administration	Licensing	NICE monotherapy in RA recommendation (i.e without methotrexate)	Intravenous (requiring day case admission)	NICE disease severity approval	Cost tier
			RA				
Pricing tier one section							
Adalimumab biosimilar (including escalated weekly dose)	TNF inhibitor	Subcutaneous	☑	☑	x	moderate and severe	£
Filgotinib	Janus kinase inhibitor	Oral	☑	☑	x	moderate and severe	£
Pricing tier two section							
Etanercept best value product	TNF inhibitor	Subcutaneous	☑	☑	x	moderate and severe	££
Rituximab biosimilar	CD20 inhibitor	Intravenous	☑	x	☑	severe	££ (see notes)
Adalimumab originator	TNF inhibitor	Subcutaneous	☑	☑	x	moderate and severe	££
Upadacitinib	Janus kinase inhibitor	Oral	☑	☑	x	moderate and severe	££
Baricitinib	Janus kinase inhibitor	Oral	☑	☑	x	severe	££
Tofacitinib	Janus kinase inhibitor	Oral	☑	☑	x	severe	££
Infliximab biosimilar	TNF inhibitor	Subcutaneous	☑	x	x	severe (in line with Intravenous)	££
Tocilizumab biosimilar	IL-6 inhibitor	Subcutaneous	☑	☑	x	severe	££
Golimumab biosimilar	TNF inhibitor	Subcutaneous	☑	☑	x	severe	££
Golimumab originator	TNF inhibitor	Subcutaneous	☑	☑	x	severe	££
Pricing tier three section							
Etanercept originator	TNF inhibitor	Subcutaneous	☑	☑	x	moderate and severe	£££
Sarilumab	IL-6 inhibitor	Subcutaneous	☑	☑	x	severe	£££
Infliximab biosimilar	TNF inhibitor	Intravenous	☑	☑	☑	severe	£££ (see notes)
Certolizumab	TNF inhibitor	Subcutaneous	☑	☑	x	severe	£££
Tocilizumab biosimilar	IL-6 inhibitor	Intravenous	☑	☑	☑	severe	£££
Abatacept	Fusion protein	Subcutaneous	☑	x	x	severe	£££
Pricing tier four section							
Tocilizumab	IL-6 inhibitor	Subcutaneous	☑	☑	x	severe	££££
Abatacept	Fusion protein	Intravenous	☑	x	☑	severe	££££
Tocilizumab originator	IL-6 inhibitor	Intravenous	☑	☑	☑	severe	££££
Infliximab originator	TNF inhibitor	Intravenous	☑	☑	☑	severe	££££

Diagnosis key:	
RA	Rheumatoid Arthritis

Notes:

1. Choice of best value biologic will be dependent upon a number of factors (for example, contraindications to therapy, co-morbidities and other patient factors). Where more than one agent is suitable for the patient, the agent with the lowest acquisition cost (taking into account method of administration) will be chosen.
2. £ rating is a banded price range of £ (low) to ££££ (high)
3. Price banding is based on average drug cost per patient per year (average for first 3 years on therapy)