Seronegative Spondyloarthropathy
Drug Treatment Pathway

Guideline Summary
This clinical guideline outlines the drug treatment pathway for adult patients with Seronegative Spondyloarthropathy.
Document Detail

Document Type: Clinical Guideline

Document name: Seronegative Spondyloarthropathy Drug Treatment Pathway

Document location: Intranet of Individual Trusts/SEL APC website

Version: Version 7

Effective from: September 2019

Review due date: September 2020 (1 year)

Owner: South East London Rheumatology Pathway Development Group

Author: South East London Rheumatology Steering Group:
  Acute Trusts:
  Kings College Hospital NHS Foundation Trust
  Consultant Rheumatologist (Chair)
  Clinical pharmacy team leader – Post-acute and Planned Medicine
  Specialist Pharmacist Rheumatology

  Guys and St Thomas’ NHS Foundation Trust
  Principal Pharmacist Immunotherapy (Rheumatology, Dermatology, Allergy) and Clinical Commissioning
  Highly Specialist Pharmacist Rheumatology
  Consultant Rheumatologist and Clinical Lead Rheumatology
  Consultant Rheumatologist
  Consultant Rheumatologist
  Advanced Nurse Specialist, Rheumatology

  Lewisham and Greenwich NHS Trust
  Consultant Rheumatologist
  Clinical Nurse Specialist, Rheumatology
  Lead Pharmacist Long term Conditions

  Clinical Commissioning Groups
  NHS Lambeth CCG (lead CCG), NHS Southwark CCG, NHS Bexley CCG, NHS Bromley CCG, NHS Greenwich CCG, NHS Lewisham CCG

Approved by, date: SEL Medicines and Pathways Review Group – August 2019
SEE APC Chair’s ratification: 02.09.10

Superseded documents: Nil

Keywords: Psoriatic, arthritis, ankylosing spondyloarthritis, spondyloarthropathy, biologic, adalimumab, apremilast, certolizumab, etanercept, golimumab, infliximab, ixekizumab, secukinumab, seronegative, ustekinumab, tofacitinib

Change History

<table>
<thead>
<tr>
<th>Date</th>
<th>Change details, since approval</th>
<th>Approved by</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.10.16</td>
<td>Secukinumab added to pathway as per NICE TA 407</td>
<td></td>
</tr>
<tr>
<td>10.10.16</td>
<td>Added: free of charges schemes, extended interval dosing and biological withdrawal in remission, biologic choice in women planning pregnancy.</td>
<td></td>
</tr>
<tr>
<td>10.10.16</td>
<td>References updated</td>
<td></td>
</tr>
<tr>
<td>1.11.16</td>
<td>Updated as per NICE TA 383 (removed two BASDAI measurements 12 weeks apart pre-biologic therapy)</td>
<td></td>
</tr>
<tr>
<td>09.12.16</td>
<td>Golimumab 50mg twice monthly dosing statement added to notes box</td>
<td></td>
</tr>
<tr>
<td>27.01.17</td>
<td>7 – added information on administration of vaccinations by early outpatient biologic initiation service</td>
<td></td>
</tr>
<tr>
<td>27.01.17</td>
<td>11 – added information on administration of first dose biologic via outpatient clinic and VAT charge to commissioners</td>
<td></td>
</tr>
<tr>
<td>14.3.17</td>
<td>5.3 – Updated as per NICE TA 433 added apremilast as option pre-biologic therapy</td>
<td></td>
</tr>
<tr>
<td>29.6.17</td>
<td>13.1 – Updated as per NICE TA 445 Added secukinumab as option in Psoriatic Arthritis</td>
<td></td>
</tr>
<tr>
<td>8.10.17</td>
<td>Corrected: Assess response at 24 weeks for ustekinumab</td>
<td></td>
</tr>
</tbody>
</table>
South East London Area Prescribing Committee: A partnership between NHS organisations in South East London; Bexley/Bromley/Greenwich/Lambeth/Lewisham & Southwark Clinical Commissioning Groups (CCGs) & GSTfT/KCH/SLAM & Oxleas NHS Foundation Trusts & Lewisham & Greenwich NHS Trust.

Approved: September 2019, minor update December 2019  
Review date: September 2020  
Not to be used for commercial or marketing purposes. Strictly for use within the NHS

### Review History

<table>
<thead>
<tr>
<th>Date</th>
<th>Review details</th>
<th>Approved by</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2016</td>
<td>Use of sub-cutaneous methotrexate added as an option</td>
<td></td>
</tr>
<tr>
<td>Feb 2018</td>
<td>Updated in line with latest NICE TAGs – see change history</td>
<td></td>
</tr>
<tr>
<td>Dec 2018</td>
<td>Updated in line with latest NICE TAGs – see change history</td>
<td></td>
</tr>
</tbody>
</table>

### Contents

1. Scope  4
2. Rationale  4
3. Principles  4
4. Definitions  4
5. Pre-biologic therapy  6
6. Pre-biologic infection screen  7
7. Vaccinations  7
8. Recruitment into clinical trials  7
9. Free of Charge Schemes  8
10. Extended interval dosing and biologic withdrawal in remission  8
11. Method of medication supply  8
12. Biologic Choice in women planning pregnancy  8
13. Biologic Treatment Pathways  8

#### 13.1 Initiation of first biologic  9
13.2 Primary or secondary failure (loss of efficacy) or minor adverse effects

14. Assessment of response following initiation of biologic

15. Treatment options following multiple biologic treatment failures

16. Monitoring compliance with the guideline

17. Supporting documentation

References

Consultation Process

Appendix 1 Best Value Biologic

1. Scope

This treatment pathway applies to adult patients with a diagnosis of seronegative spondyloarthritis who are approaching treatment with biologic therapy.

2. Rationale

This treatment pathway provides an evidence based approach for the treatment of seronegative spondyloarthritis 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, and British Society for Rheumatology, BSR), 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 seronegative spondyloarthropathies in adults which are published after the approval date of this guideline will be commissioned 90 days (30 days for fast track TAs) from publication in line with the TA recommendations.

4. Definitions

4.1 Adequate response

- Psoriatic Arthritis
  - An improvement in at least 2 of the 4 Psoriatic Arthritis Response Criteria (PsARC) at 12 weeks*, one of which has to be tender or swollen joint count with no worsening in any of the 4 criteria.
  - A Psoriasis Area and Severity Index (PASI) 75 response at 12 weeks*, but a PsARC which does not justify continuation of treatment; with review by a dermatologist where skin improvement justifies continuation of treatment.
• Ankylosing Spondylitis
  o Reduction of the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) score to 50% of the pre-treatment value or by 2 or more units AND reduction of the spinal visual analogue scale (VAS) by 2cm or more.

4.2 Inadequate response

• Psoriatic Arthritis
  o Improvement in less than 2 of the 4 Psoriatic Arthritis Response Criteria (PsARC) at 12 weeks* or worsening in any of the 4 criteria
  o Not achieving a PASI 75 response at 12 weeks*

• Ankylosing Spondylitis
  o Less than 50% reduction in the BASDAI score of the pre-treatment value or by less than 2 units OR a less than 2cm reduction in the spinal VAS at 12 weeks*.

4.3 Primary failure – patient does not achieve an adequate response after 12 weeks treatment*

4.4 Secondary failure – patient initially achieves an adequate response after 12 weeks* but this is not sustained, resulting in an inadequate response.

4.5 Oligoarthritis
  o Persistent pain and swelling of less than 3 joints with failure of 2 Disease Modifying Anti-Rheumatic Drugs (DMARDs), and short-lived or no response to intra-articular corticosteroid.

*Apremilast and secukinumab – 16 weeks and ustekinumab – 24 weeks
5. **Pre-biologic therapy [Non-steroidal anti-inflammatory drugs (NSAIDs), steroids, DMARDs or Apremilast]**

5.1. **Psoriatic Arthritis (PsA)**

<table>
<thead>
<tr>
<th>NSAIDs and/or local intra-articular steroids</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active and Progressive Psoriatic Arthritis</td>
</tr>
<tr>
<td>peripheral arthritis +</td>
</tr>
<tr>
<td>≥ 3 tender joints and ≥3 swollen joints</td>
</tr>
<tr>
<td>AND</td>
</tr>
<tr>
<td>Failure of at least 2 DMARDs</td>
</tr>
<tr>
<td>(Sequentially or in combination)</td>
</tr>
</tbody>
</table>

(DMARDs used for 12 weeks at standard dosage unless dose or duration limited by toxicity)

5.2. **Axial Spondyloarthritis (including ankylosing spondylitis (AS) and non-radiographic axial spondyloarthritis)**

2 or more NSAIDs taken sequentially at maximum tolerated or recommended doses for 4 weeks

UNLESS contraindicated, failure to respond or patient demonstrates intolerance

Patient’s disease satisfies the modified New York criteria for diagnosis of ankylosing spondylitis

AND/OR

satisfies the ASAS (Assessment of SpondyloArthritis International Society) classification criteria for axial spondyloarthritis

AND

There is confirmation of sustained active spinal disease demonstrated by:

- a BASDAI of at least 4 units
- a VAS of at least 4cm
Strategies for maximising the use of DMARDs prior to apremilast and biologic therapy:

- Adjusting folic acid dose/frequency/formulation to improve tolerance to oral methotrexate (e.g. folic acid liquid 1mg daily except day methotrexate is taken)
- Subcutaneous methotrexate where clinically appropriate (e.g. gastrointestinal adverse effects with oral methotrexate or poor compliance) When used in this situation, subcutaneous methotrexate is billable to CCGs for approved indications. Refer to Appendix 1.
- Where appropriate, maximum intensification of combination therapy using maximum tolerated doses.

5.3 Apremilast in Psoriatic Arthritis

Apremilast, alone or in combination with DMARDS, is recommended as an option for treating active psoriatic arthritis if:

- Peripheral arthritis with ≥ 3 tender joints and ≥3 swollen joints
- AND
- Their disease has not responded to adequate trials of at least 2 DMARDs given either alone or in combination

Assess response at 16 weeks (see section 14).

If minor adverse effects develop at any time or initial response is not sustained (secondary failure) go to section 13.1.

6. Pre-biologic Infection screen

- Tuberculosis (T spot or quantiferon and chest x-ray)
- Viral serology: hepatitis B, C and Human Immunodeficiency Virus (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.

Eligible patients may be offered vaccination against shingles with Zostavax™ (herpes zoster vaccine) in line with Department of Health and Social Care guidelines. Refer to the Department of Health and Social Care website for the eligibility criteria for receiving the vaccination and the Green book for clinical information. This is a live vaccination and patients should not be given the vaccine if they are receiving biologic treatments. To avoid inadvertent administration of this live vaccine, on receipt of clinic letters, GPs should update practice records to indicate which patients are 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 administer to outpatients.

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 currently recruiting within local rheumatology departments. Where a clinical trial does not meet the requirements of the pathway, approval should be obtained from commissioners prior to initiation.

9. Free of charge schemes

New biologics 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
- Fund the treatment 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
- 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 the patient is in remission. If patients flare following the 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 women planning pregnancy

Certolizumab pegol is compatible with all three trimesters of pregnancy and has reduced placental transfer when compared with other tumour necrosis factor α (TNF) inhibitors. For these reasons it is the biologic of choice before, during and after pregnancy (whilst breast feeding). Patients may require to be switched from their current biologic to certolizumab pegol in advance of conception. This should not count as a routine biologic switch and is subject to clinical judgment. Certolizumab 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.

Adalimumab and etanercept are compatible with the first and second trimesters of pregnancy. Female patients of child-bearing potential or pregnant and stable on either of these TNF inhibitors will have their biologic therapy reviewed with their clinician regularly as it may be clinically more appropriate to remain on their current regimen rather than switch therapy. Treatment can then be stopped temporarily in the third trimester.

For further recommendations on biologic or DMARD choice in pregnancy or breast feeding, refer to the British Society for Rheumatology (BSR) / British Health Professionals in Rheumatology (BHPR) guideline.

http://www.rheumatology.org.uk/resources/guidelines/default.aspx
Biologic Treatment Pathways

13.1 Initiation of first Biologic

Cautions or contraindication to anti-tumour necrosis factor α (TNF) drugs?
E.g. recent solid tumour (< 5 years), history of melanoma, multiple sclerosis, autoimmune rheumatic lung disease, interstitial lung disease (ILD), septic arthritis < 12 months, heart failure NYHA III/IV

Yes

PsA

Best value IL17 inhibitor
OR
Tofacitinib
OR
IL12/23 inhibitor

No

PsA

Best value IL17 inhibitor

Skin psoriasis

Uveitis

Bowel disease

FIRST CHOICE
Best value adalimumab
2nd choice tofacitinib

NOTES
1. Anti TNF α inhibitor, IL17 inhibitor and tofacitinib (PsA only) may be prescribed as first biologic.
2. If unable to administer subcutaneous injection or history of poor adherence consider intravenous biosimilar infliximab (AS or PsA) or tofacitinib (PsA only).
   - Infliximab is not commissioned for use in non-radiographic axial spondyloarthritis.
3. Certolizumab pegol first line in pregnancy see section 12.
4. Avoid IL17 inhibitor in inflammatory bowel disease.
5. Ixekizumab – if patient has severe psoriasis liaise with dermatology for prescribing to allow access to optimal dose.
6. 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; tofacitinib is an option where an oral agent is preferred to improve compliance and concordance, and based on individual patient factors.
7. See Best Value Biologic table in Appendix 1 for further information on drug selection
13.2 Primary or Secondary Failure (loss of efficacy) or minor adverse effects (e.g. injection site reactions) with first biologic

**Primary or secondary failure to first biologic**

**AS/Non-radiographic axial spondyloarthritis**

**A trial of ONE alternative best value biologic**
- Anti-TNFα (12 weeks)
- OR
- IL17 inhibitor (16 weeks)

**PsA**

**A trial of ONE alternative best value biologic**
- Anti-TNFα (12 weeks) or
- Tofacitinib (12 weeks) or
- IL17 inhibitor (16 weeks) or
- IL12/23 inhibitor (24 weeks)

**NOTES**

*Psoriatic Arthritis*

1. For patients with concomitant moderate to severe plaque psoriasis or who are anti-TNFα inadequate responders, the recommended dose of secukinumab is 300 mg by subcutaneous injection with initial dosing at Weeks 0, 1, 2, 3 and 4, followed by monthly maintenance dosing.

2. Ixekizumab – if psoriasis main issue then liaise with Dermatologists to consider prescription of higher dose. If higher dose appropriate – prescribing should be taken over by the Dermatology team.

3. See Best value table in Appendix 1 for further information on drug selection.

4. Secukinumab dose escalation for patients with psoriatic arthritis
   - Patients who are anti-TNF naïve should be commenced on a dose of 150mg monthly.
   - The dose may be escalated to 300mg monthly if the following criteria are met:
     - The patient has had a partial response to secukinumab 150mg as determined by a Rheumatology consultant after at least 16 weeks of therapy
     - The patient has a contraindication to anti-TNF
     - The decision to escalate treatment is made in conjunction with the MDT
   - Clinical audit or Blueteq will be used to monitor outcomes and usage
   - Response to the escalated dose must be assessed after 16 weeks. Treatment should be stopped if there is no improvement in disease activity defined as improvement in at least two of the four PsARC criteria (one of which must be joint tenderness or swelling) with no worsening in any of the four criteria when compared to baseline.
14. Assessment of Response following initiation of biologic

<table>
<thead>
<tr>
<th>Psoriatic Arthritis</th>
<th>PsARC – response in 2 out of 4 PsARC criteria with no worsening in any of the 4 criteria OR PASI 75 response + dermatologist review of skin response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-TNFα inhibitor</td>
<td>JAK inhibitor</td>
</tr>
<tr>
<td>Apremilast</td>
<td>IL17 inhibitor</td>
</tr>
<tr>
<td>IL12/23 inhibitor</td>
<td></td>
</tr>
<tr>
<td>12 weeks</td>
<td>16 weeks</td>
</tr>
<tr>
<td>24 weeks</td>
<td></td>
</tr>
</tbody>
</table>

Ankylosing Spondylitis

<table>
<thead>
<tr>
<th>Reduction of the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) score to 50% of the pre-treatment value or by 2 or more units AND reduction of the spinal visual analogue scale (VAS) by 2cm or more.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-TNFα inhibitor</td>
</tr>
<tr>
<td>IL17 inhibitor</td>
</tr>
<tr>
<td>12 weeks</td>
</tr>
<tr>
<td>16 weeks</td>
</tr>
</tbody>
</table>

Continue to assess response every 6 to 12 months if adequate response achieved. Treatment should be stopped and switched to alternative biologic if adequate response not achieved.

15. Treatment options following multiple biologic treatment failures including where biologics are contraindicated, not tolerated or in cases of hypersensitivity in PsA and AS

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 disease present.
- 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.
  - Decision should be made in a multidisciplinary team (MDT) discussion in the local rheumatology department.
  - Clinical outcomes and baseline scores must be reported to the CCG using a Category B* form.
  - Include concurrent corticosteroid dose or use of methylprednisolone in previous 6-12 months.
  - Measure disease activity scores e.g. HAQ, BASDAI, tender and swollen joint counts.

16. Monitoring adherence with the guideline

Adherence to this pathway will be reviewed using the South East London Rheumatology Pathways, Outcomes and Monitoring Framework which includes Key Performance Indicators agreed by South East London Area Prescribing Committee. See [http://www.lambethccg.nhs.uk](http://www.lambethccg.nhs.uk) for further details. The Rheumatology and Pharmacy Departments may undertake separate clinical audits as part of their annual clinical audit plan.

17. Supporting documents

- See relevant local guidelines
References
1. Mercer S. Guys and St Thomas’ NHS Foundation Trust. Clinical Guideline. Rheumatoid Arthritis Biologic Treatment Pathway (approved version 4.0)
2. NICE Technology appraisal guidance TA 199 Etanercept, Infliximab and Adalimumab, for the treatment of psoriatic arthritis. Includes a review of NICE technology appraisal guidance 104 and 125. Issue Date: August 2010. Review date: June 2013.
3. NICE Technology appraisal guidance TA 220 Golimumab for the Treatment of Psoriatic Arthritis April 2011.
4. Coates LC et al. on behalf of BSR Clinical Affairs Committee and Standards Audit and Guidelines Working Group and the BHPR. The 2012 BSR and BHPR guideline for the treatment of psoriatic arthritis with biologics. Rheumatology 2012; 1-17
5. NICE technology appraisal guidance TA 313 Ustekinumab for treating active psoriatic arthritis. May 2014
6. NICE Technology appraisal guidance TA 233 Golimumab for the treatment of ankylosing spondylitis August 2011
7. NICE Technology appraisal guidance TA 143 Adalimumab, etanercept and infliximab for ankylosing spondylitis May 2008
8. NICE Technology appraisal guidance TA 340 Ustekinumab for treating active psoriatic arthritis June 2015
9. NICE Technology appraisal guidance TA 383 TNF-alpha inhibitors for ankylosing spondylitis and non-radiographic axial spondyloarthritis February 2016
10. NICE Technology appraisal guidance TA 407 Secukinumab for active ankylosing spondylitis after treatment with non-steroidal anti-inflammatory drugs or TNF-alpha inhibitors September 2016
11. NICE Evidence Summary: new medicine (ESNM42) Psoriatic Arthritis in adults: certolizumab pegol June 2014
12. NICE Technology Appraisal guidance TA 433 Apremilast for treating active psoriatic arthritis January 2017
13. NICE Technology Appraisal guidance TA 445 Certolizumab pegol and secukinumab for treating active psoriatic arthritis after inadequate response to DMARDs May 2017
14. NICE Technology Appraisal guidance TA 497 Golimumab for treating non-radiographic axial spondyloarthritis January 2018
15. NICE Technology Appraisal guidance TA 537 Ixekizumab for treating active psoriatic arthritis after inadequate response to DMARDs. August 2018.
16. NICE Technology Appraisal guidance TA 543 Tofacitinib for treating active psoriatic arthritis after inadequate response to DMARDs October 2018
21. Cantini F, Niccoli L, Benucci M, Chindamo D, Nannini C, Olivieri I, Padula A and Salvarani C. Switching from Infliximab to once-weekly administration of 50mg etanercept in resistant or intolerant patients with ankylosing spondylitis: Results of a fifty four week study Arthritis and Rheumatism (Arthritis Care and Research) 2006 55: 5; 812-816
24. Coates LC, Cawkwell LS, Ng NWF, Bennett AN, Bryer DJ, Fraser AD, Emery P and Marzo-Ortega H. Real life experience confirms sustained response to long term biologics and switching in ankylosing spondylitis. Rheumatology 2008: 47; 897-900

Consultation Process for the current version

South East London Rheumatology Steering Group: September 2019
SEL Medicines and Pathways Review Group (MPRG): December 2019
## Appendix 1: Best value biologics cost tool - seronegative spondyloarthropathies

<table>
<thead>
<tr>
<th>Drug</th>
<th>Mode of action</th>
<th>Route of administration</th>
<th>Licensing</th>
<th>Intravenous (requiring day case admission)</th>
<th>Cost tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adalimumab</td>
<td>TNF inhibitor</td>
<td>subcutaneous</td>
<td></td>
<td>x</td>
<td>£</td>
</tr>
<tr>
<td>Etanercept</td>
<td>TNF inhibitor</td>
<td>subcutaneous</td>
<td></td>
<td>x</td>
<td>£</td>
</tr>
<tr>
<td>Secukinumab 150mg</td>
<td>IL-17A inhibitor</td>
<td>subcutaneous</td>
<td></td>
<td>if anti-TNF naïve 150mg dosing</td>
<td>x</td>
</tr>
<tr>
<td>Tofacitinib</td>
<td>Janus kinase inhibitor</td>
<td>oral</td>
<td></td>
<td>x</td>
<td>£</td>
</tr>
<tr>
<td>Ixekizumab</td>
<td>IL-17A inhibitor</td>
<td>subcutaneous</td>
<td></td>
<td>x</td>
<td>£££</td>
</tr>
<tr>
<td>Secukinumab 300mg</td>
<td>IL-17A inhibitor</td>
<td>subcutaneous</td>
<td></td>
<td>if already received anti-TNF 300mg dosing</td>
<td>x</td>
</tr>
<tr>
<td>Ustekinumab</td>
<td>IL-23 &amp; IL-12 inhibitor</td>
<td>subcutaneous</td>
<td></td>
<td>x</td>
<td>£££</td>
</tr>
</tbody>
</table>

### Alternative Anti-TNF (subcut)

<table>
<thead>
<tr>
<th>Drug</th>
<th>Mode of action</th>
<th>Route of administration</th>
<th>Licensing</th>
<th>Intravenous (requiring day case admission)</th>
<th>Cost tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golimumab</td>
<td>TNF inhibitor</td>
<td>subcutaneous</td>
<td></td>
<td>x</td>
<td>£££</td>
</tr>
<tr>
<td>Certolizumab</td>
<td>TNF inhibitor</td>
<td>subcutaneous</td>
<td></td>
<td>x</td>
<td>£££</td>
</tr>
</tbody>
</table>

### Additional medications not listed above

<table>
<thead>
<tr>
<th>Drug</th>
<th>Mode of action</th>
<th>Route of administration</th>
<th>Licensing</th>
<th>Intravenous (requiring day case admission)</th>
<th>Cost tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apremilast</td>
<td>Phosphodiesterase 4 (PDE4) inhibitor</td>
<td>oral</td>
<td></td>
<td>x</td>
<td>£££</td>
</tr>
<tr>
<td>Infliximab biosimilar</td>
<td>TNF inhibitor</td>
<td>intravenous</td>
<td></td>
<td>x</td>
<td>£££</td>
</tr>
<tr>
<td>Infliximab originator</td>
<td>TNF inhibitor</td>
<td>intravenous</td>
<td></td>
<td>x</td>
<td>£££££</td>
</tr>
</tbody>
</table>

### 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)