**National Institute for Health and Care Excellence**

**Single Technology Appraisal (STA)**

**Deucravacitinib for treating moderate to severe plaque psoriasis (ID3859)**

**Please note:** Comments received in the course of consultations carried out by NICE are published in the interests of openness and transparency, and to promote understanding of how recommendations are developed. The comments are published as a record of the submissions that NICE has received, and are not endorsed by NICE, its officers or advisory committees.

**Comment 1: the draft remit**

| Section | Consultee/ Commentator | Comments [sic] | Action |
| --- | --- | --- | --- |
| Appropriateness | Bristol Myers Squibb | This is an appropriate topic for NICE to appraise. | Comment noted. No action required. |
| UCB Pharma Ltd | Yes, it is appropriate to refer this technology to NICE for evaluation | Comment noted. No action required. |
| Novartis Pharmaceuticals UK Ltd | We consider the proposed appraisal appropriate. | Comment noted. No action required. |
| Psoriasis Association | Yes. | Comment noted. No action required. |
| Psoriasis and Psoriatic Arthritis Alliance | Yes, it would be entirely appropriate to refer deucravacitinib for appraisal, given it’s likely to be used in the pathway where other well-established treatments are already recommended. Its action and target are different and a once-daily oral dosage could be seen as an advantageous route for some patients, if it compares favourably with existing treatments risk/benefit profiles. | Comment noted. No action required. |
| Wording | Bristol Myers Squibb | The wording of the remit does reflect the issues presented within this disease area. | Comment noted. No action required. |
| UCB Pharma Ltd | Yes, the wording is appropriate. | Comment noted. No action required. |
| Novartis Pharmaceuticals UK Ltd | There is no clear definition of “moderate to severe plaque psoriasis”.  The evidence for clinical efficacy of deucravacitinib comes from very similar populations included in studies of secukinumab and other biologic agents.  Whilst secukinumab and other biologic agents have marketing authorisation for treatment of moderate to severe plaque psoriasis, NICE recommendations for these products refer to severe disease. We therefore suggest that the appraisal should focus on patients with severe psoriasis. | Comment noted. Deucravacitinib will be appraised within its marketing authorisation. No action required. |
| Psoriasis Association | No comment. | Comment noted. No action required. |
| Psoriasis and Psoriatic Arthritis Alliance | Yes, assuming the marketing authorisation remains for moderate to severe plaque psoriasis. | Comment noted. No action required. |
| Timing Issues | Bristol Myers Squibb | We are in the belief that there is a need for a convenient, well tolerated therapeutic option for patients with moderate to severe plaque psoriasis in the UK and as such, this appraisal should be prioritised to ensure access for these patients. | Comment noted. No action required. |
| UCB Pharma Ltd | Timing should follow NICE technology appraisal timelines | Comment noted. No action required. |
| Novartis Pharmaceuticals UK Ltd | No comment. | Comment noted. No action required. |
| Psoriasis Association | No comment. | Comment noted. No action required. |
| Psoriasis and Psoriatic Arthritis Alliance | There is no immediate urgency, as psoriasis currently has a range of treatments available. Although, for some who either do not respond or have exhausted current options, there will be some urgency to treat the condition. As a chronic flaring condition, untreated psoriasis can lead to poor long-term health, both physically and psychologically, which in-turn will impact on the NHS and social care services. | Comment noted. No action required. |
| Additional comments on the draft remit | Bristol Myers Squibb | No comment. | Comment noted. No action required. |
| UCB Pharma Ltd | No comment. | Comment noted. No action required. |
| Novartis Pharmaceuticals UK Ltd | No comment. | Comment noted. No action required. |
| Psoriasis Association | No comment. | Comment noted. No action required. |
| Psoriasis and Psoriatic Arthritis Alliance | No. | Comment noted. No action required. |

Comment 2: the draft scope

| Section | Consultee/ Commentator | Comments [sic] | Action |
| --- | --- | --- | --- |
| Background information | Bristol Myers Squibb | The information is complete and accurate. | Comment noted. No action required. |
| UCB Pharma Ltd | No comment. | Comment noted. No action required. |
| Novartis Pharmaceuticals UK Ltd | No comment. | Comment noted. No action required. |
| Psoriasis Association | No comment. | Comment noted. No action required. |
| Psoriasis and Psoriatic Arthritis Alliance | Psoriasis generally first appears during or around puberty/early adulthood and usually lasts a lifetime, with no gender split. Although it’s not clear what triggers psoriasis, it can follow an infection, such as streptococcal throat, skin injury or trauma (The Koebner phenomenon). Some drug therapies can exacerbate the condition, as can sunlight, cold weather and humidity in some individuals. There are associated conditions such as psoriatic arthritis (around 1-4 people with psoriasis), uveitis (although rare), and a potential increase in cardiovascular risk. Often during pregnancy psoriasis improves, but for some it gets worse.  Although this topic is for plaque psoriasis, it’s worth noting that there are other manifestation presentations, such as guttate (raindrop psoriasis) and flexural/inverse psoriasis, where the skin between folds can become sore and red, but with no visible plaques, often in intimate areas, causing stigma and embarrassment. Benefit for these individuals would be very valuable. | Comment noted. This appraisal will focus on plaque psoriasis and other manifestations of psoriasis will not be discussed. No action required. |
| The technology/ intervention | Bristol Myers Squibb | The description is accurate. The brand name for deucravicitinib is to be confirmed. | Comment noted. No action required. |
| UCB Pharma Ltd | No comment. | Comment noted. No action required. |
| Novartis Pharmaceuticals UK Ltd | No comment. | Comment noted. No action required. |
| Psoriasis Association | No comment. | Comment noted. No action required. |
| Psoriasis and Psoriatic Arthritis Alliance | Yes. | Comment noted. No action required. |
| Population | Bristol Myers Squibb | The population as outlined is appropriate. | Comment noted. No action required. |
| UCB Pharma Ltd | NICE should appraise the technology in line with the anticipated population description in the market authorisation | Comment noted. No action required. |
| Novartis Pharmaceuticals UK Ltd | There is no clear definition of “moderate to severe plaque psoriasis”. The evidence for clinical efficacy of deucravacitinib comes from very similar populations included in studies of secukinumab and other biologic agents. Whilst secukinumab and other biologic agents have marketing authorisation for treatment of moderate to severe plaque psoriasis, NICE recommendations for these products refer to severe disease.  We therefore suggest that the appraisal should focus on patients with severe psoriasis. | Comment noted. Deucravacitinib will be appraised within its marketing authorisation. No action required. |
| Psoriasis Association | Yes – defined appropriately | Comment noted. No action required. |
| Psoriasis and Psoriatic Arthritis Alliance | Yes, assuming the marketing authorisation is the same. | Comment noted. No action required. |
| Comparators | Bristol Myers Squibb | We believe that the comparators listed encompass the treatments used in the NHS for patients within this population. Infliximab as noted is only used in a severe+ population and therefore is often used in a very different population to typical biological/systemic usage.  Usage of different regimens and classes vary as does where they are used in the treatment pathway and as such there is not a popular definition of best alternative care | Comment noted. No action required. |
| UCB Pharma Ltd | The inclusion of infliximab is inappropriate as its recommendation for use by NICE is outside the scope of this appraisal. NICE recommends infliximab for adult patients with very severe disease as defined by a PASI of ≥20 and a DLQI of >18; however, the population under consideration is adult patients with moderate to severe disease, which NICE defines as a PASI of ≥10 and a DLQI of >10. Infliximab may be considered as a comparator in patient subgroups who have a very severe disease as per NICE definition | Comment noted. The comparators listed in the scope aims to be inclusive. The rationale for excluding any comparators from the evidence submission will be considered by the appraisal committee. No action required. |
| Novartis Pharmaceuticals UK Ltd | No comment. | Comment noted. No action required. |
| Psoriasis Association | Yes – if taking into consideration the biosimilars | Comment noted. No action required. |
| Psoriasis and Psoriatic Arthritis Alliance | Should the PASI score of 10 or more be added the TNF-alpha inhibitors in this section too, to give context for the infliximab PASI of 20 or more? Or remove the latter score. It’s in the narrative above, so maybe doesn’t need to be here too? | Comment noted. The scope has been updated to define that severe or very severe is defined by a total PASI of 10 or more, and a DLQI of more than 10. |
| Outcomes | Bristol Myers Squibb | The outcomes as listed are broadly appropriate and are commonplace in the assessment of technologies within this indication. | Comment noted. No action required. |
| UCB Pharma Ltd | The list of outcome measures included in the scope aligns with previous NICE appraisals in this therapy area | Comment noted. No action required. |
| Novartis Pharmaceuticals UK Ltd | The outcomes specified are appropriate. | Comment noted. No action required. |
| Psoriasis Association | I feel the wording on the second bullet point (“psoriasis symptoms, such as itch on the following areas: face, scalp, nails and joints, and other difficult-to-treat areas including the hands, feet and genitals”) needs amending as the “itch” isn’t on the nails or joints and the importance of these areas is that they are “high impact sites”. Suggest amending to:  Psoriasis symptoms, such as itch, and on the following areas: face, scalp, nails and joints, and other difficult-to-treat areas including the hands, feet and genitals | Comment noted. The outcome has been reworded to ‘Psoriasis symptoms, such as itch, and symptoms on the following areas: face, scalp, nails and joints, and other difficult-to-treat areas including the hands, feet and genitals’ in the scope. |
| Psoriasis and Psoriatic Arthritis Alliance | Yes, assuming they include the validated tools. | Comment noted. No action required. |
| Economic analysis | Bristol Myers Squibb | The time horizon should be long enough to capture costs and effects for patients receiving sequential treatments in psoriasis. | Comment noted. No action required. |
| UCB Pharma Ltd | No comment. | Comment noted. No action required. |
| Novartis Pharmaceuticals UK Ltd | No comment. | Comment noted. No action required. |
| Psoriasis Association | No comment. | Comment noted. No action required. |
| Psoriasis and Psoriatic Arthritis Alliance | Yes | Comment noted. No action required. |
| Equality and Diversity | Bristol Myers Squibb | None | Comment noted. No action required. |
| UCB Pharma Ltd | No comment | Comment noted. No action required. |
| Novartis Pharmaceuticals UK Ltd | No comment. | Comment noted. No action required. |
| Psoriasis Association | No comment. | Comment noted. No action required. |
| Psoriasis and Psoriatic Arthritis Alliance | Oral medication can help those with issues related to other treatment delivery methods, which equally applies to those who are unable to swallow medicine, so nothing appears to be inequitable in this instance. | Comment noted. No action required. |
| Other considerations | Bristol Myers Squibb | The draft scope captures potential subgroups of relevance. These subgroups will be explored where the evidence allows and based on the context of the and where the subgroup corresponds to a clinically relevant use of the technology in NHS clinical practice. However, it should be noted that there is no clear definition1,2 of moderate psoriasis and stakeholders use different definitions:  • EMA3: PASI>=10  • Clinical experts4: PASI=5-9  The lack of consistency of how severity is defined is particularly troublesome when synthesising published literature in this area. Not only do a limited amount of literature report data by severity subgroups which could introduce reporting bias, of those that do report subgroups by severity, there is often a lack of detail on how the threshold has been defined.  1. Salgado-Boquete et al. 2021. A New Classification of the Severity of Psoriasis: What’s Moderate Psoriasis? Life (Basel). 11 (7): 627  2. Knuckles et al. 2018. Defining and treating moderate plaque psoriasis: a dermatologist survey. J Dermatolog Treat. 29 (7): 658-663  3. Committee for Medicinal Products for Human Use (CHMP) 2004. Guideline on Clinical Investigation of Medicinal Products Indicated for the Treatment of Psoriasis.  4. National Institute for Health and Care Excellence. 2019. Apremilast for treating moderate to severe plaque psoriasis [NICE Guideline TA419] | Comment noted. No action required. |
| UCB Pharma Ltd | No comment | Comment noted. No action required. |
| Novartis Pharmaceuticals UK Ltd | No comment**.** | Comment noted. No action required. |
| Psoriasis Association | Requirements for ongoing monitoring e.g. how regularly and what type of monitoring is required (this is of particular relevance given the ongoing difficulties patients face when trying to obtain appointments) | Comment noted. The following text has been added to the scope: ‘Ongoing monitoring costs associated with psoriasis should be taken into account.’ |
| Psoriasis and Psoriatic Arthritis Alliance | No. | Comment noted. No action required. |
| Innovation | Bristol Myers Squibb | Deucravacitinib has a novel and unique mechanism of action that differs from other currently approved therapies for moderate to severe psoriasis.  Deucravacitinib is a selective tyrosine kinase 2 (TYK2) inhibitor. TYK2 is an intracellular non-receptor kinase that mediates the signalling of the pro-inflammatory cytokines interleukin (IL)-23, IL-12, and Type I interferons (IFN). IL-23, IL-12, and type I IFNs are naturally occurring cytokines that are upregulated in inflammatory and immune responses. This unique mode of binding to the regulatory domain of TYK2 avoids the conserved active site in the kinase domain, thus resulting in inhibition of TYK2 but not the related family members, Janus kinase (JAK)1, JAK2, or JAK3 at clinically relevant concentrations.  Therefore, by being the first selective inhibitor of TYK2, representing a new class of agent, deucravacitinib provides an alternative therapy with a different mechanism of action for patients living with moderate to severe psoriasis. In addition, the oral route of administration and the potential reduction in the time to initiate these patients on therapy (versus traditional systemic biologics) could address a substantial unmet need in this area however, is unlikely to be captured in traditional QALY calculations.  Deucravicitinib also holds a Promising Innovative Medicine (PIM) designation (PIM 2020/0015) | Comment noted. No action required. |
| UCB Pharma Ltd | No comment | Comment noted. No action required. |
| Novartis Pharmaceuticals UK Ltd | No comment. | Comment noted. No action required. |
| Psoriasis Association | Yes – this is a first in class for the treatment of psoriasis and whilst many people are comfortable using injections, there are many who prefer oral administration of medication. The impact of drugs on the immune system (and their lasting effects on the immune system) is of greater concern to people since the COVID-19 pandemic and some may feel more comfortable with a medication taken more regularly to maintain response rather than the longer-lasting but less-frequently dosed injectable biologics. | Comment noted. No action required. |
| Psoriasis and Psoriatic Arthritis Alliance | No, although different target and dosage regime, not a step change from other available therapies. | Comment noted. No action required. |
| Questions for consultation | Bristol Myers Squibb | **Q1. Have all relevant comparators for deucravacitinib been included in the scope?**  Yes  **Q2. Which treatments are considered to be established clinical practice in the NHS for moderate to severe plaque psoriasis?**  We believe that the treatments as listed in the scope represent established clinical practice in the NHS. Treatment choice is often multi-faceted and is highly dependent on the patient profile, nature of the disease (both severity and location), patient preference, adherence to local and national guidelines, and clinical expertise. Although there are approved therapies which are used more than others, all therapies on the list provided (noting the caveat of Infliximab as discussed in the comparators section) we consider to be established clinical practice.  **Q3. Are the outcomes listed appropriate?**  Yes  Q4. Are the subgroups suggested in ‘other considerations’ appropriate? Are there any other subgroups of people in whom deucravacitinib is expected to be more clinically effective and cost effective or other groups that should be examined separately?  Please refer to the response in the ‘other considerations’ section of this document. We do not believe that deuravicitinib will perform more or less effectively, both clinically and economically in any subgroup of interest.  Q5. How widespread is the use of biosimilar products in clinical practice?  Based on initial evidence gathering work, we believe that biosimilar usage in the NHS is significant, due primarily to the commissioning framework for biologics5 developed in 2017. Despite this, there does appear to be significant variations in adherence to the framework within clinician expert opinion in a substantial number of cases often being prioritised.  5. [National Health Service (NHS) 2017. Commissioning framework for biological medicines (including biosimilar medicines).](https://www.england.nhs.uk/wp-content/uploads/2017/09/biosimilar-medicines-commissioning-framework.pdf)  **Q6. Where do you consider deucravacitinib will fit into the existing NICE pathway,** [**Psoriasis**](https://pathways.nice.org.uk/pathways/psoriasis)**?**  We expect deucravacitinib to be positioned alongside other approved systemic therapies in the moderate to severe space, against comparators where cost-effectiveness can be demonstrated.  Q7. NICE is committed to promoting equality of opportunity, eliminating unlawful discrimination and fostering good relations between people with particular protected characteristics and others. Please let us know if you think that the proposed remit and scope may need changing in order to meet these aims.  Please refer to the response in the ‘equality” section of this document. We do not believe that the proposed remit and scope need adjusting to address inequalities.  **Q8. Do you consider deucravacitinib to be innovative in its potential to make a significant and substantial impact on health-related benefits and how it might improve the way that current need is met (is this a ‘step-change’ in the management of the condition)?**  Please refer to the response in the ‘innovation” section of this document. We believe that deucravicitinib is an innovative medicine (as demonstrated by the PIM designation) and will address a substantial unmet need in this disease area, based on its effective, safe and convenient profile.  **Q9. Do you consider that the use of deucravacitinib can result in any potential significant and substantial health-related benefits that are unlikely to be included in the QALY calculation?**  Please refer to the response in the ‘innovation” section of this document. We believe that the introduction of deucravicitinib could bring about benefits such as the potential reduction in the time to initiate patients on therapy and the oral mechanism of action in a subgroup of patients who injections are not preferred.  **Q10. To help NICE prioritise topics for additional adoption support, do you consider that there will be any barriers to adoption of this technology into practice?**  No, we do not believe there to be any barriers in place that would prevent the adoption of this technology into practice.  **Q11. We welcome comments on the appropriateness of appraising this topic through cost comparison process.**  Unlike other therapies that have been approved as part of a cost comparison process, we do not believe that this will be suitable for deucravicitinib. Firstly, it does not fulfil the main criteria underpinning this process: deucravacitinib is not likely to provide similar or greater overall health benefits at similar or lower cost than technologies recommended in published NICE technology appraisal guidance for the same indication. Secondly, as detailed in the innovation section of this document, deucravicitinib is a first-in-class therapy with a unique method of action and as such there is no comparison treatment for such a comparison to be made. | Comment noted. No action required.  Comment noted. No action required.  Comment noted. No action required.  Comment noted. No action required.  Comment noted. No action required.  Comment noted. No action required.  Comment noted. No action required.  Comment noted. No action required.  Comment noted. No action required.  Comment noted. No action required.  Comment noted. No action required. |
| UCB Pharma Ltd | Where do you consider deucravacitinib will fit into the existing NICE pathway, Psoriasis?  UCB expects Deucravacitinib to be positioned after systemic non-biologics for the management of severe disease as defined by NICE as a PASI score of ≥10 and a DLQI of >10 | Comment noted. No action required. |
| Novartis Pharmaceuticals UK Ltd | **Which treatments are considered to be established clinical practice in the NHS for moderate to severe plaque psoriasis?**  **Novartis:** We consider the treatment pathway outlined in the Background Information section to be accurate.  Are the outcomes listed appropriate?  **Novartis:** See comments above on “Outcomes”.  Are the subgroups suggested in ‘other considerations appropriate? Are there any other subgroups of people in whom deucravacitinib is expected to be more clinically effective and cost effective or other groups that should be examined separately?  Novartis: Nothing further to add beyond comment that moderate and severe psoriasis are poorly defined.  **Do you consider deucravacitinib to be innovative in its potential to make a significant and substantial impact on health-related benefits and how it might improve the way that current need is met (is this a ‘step-change’ in the management of the condition)?**  **Novartis:** See comments above on “Innovation.  **Is there any substantial new evidence for the comparator technology/ies that has not been considered? Are there any important ongoing trials reporting in the next year?**  Novartis: BADBIR analysis of drug survival for adalimumab, secukinumab and ustekinumab - Yiu ZZ et al. Br J Dermatol 2020 Aug;183(2):294-302. doi: 10.1111/bjd.18981. Epub 2020 Mar 30 | Comment noted. No action required.  Comment noted. No action required.  Comment noted. No action required.  Comment noted. No action required.  Comment noted. No action required. |
| Psoriasis Association | The use of Deucravacitinib in women of childbearing age (restrictions / need for contraception etc. / time required off the drug before pregnancy) | Comment noted. This will be considered in the Equality Impact Assessment form. No action required. |
| Psoriasis and Psoriatic Arthritis Alliance | None. | Comment noted. No action required. |
| Additional comments on the draft scope | Bristol Myers Squibb | None | Comment noted. No action required. |
| UCB Pharma Ltd | No additional comment. | Comment noted. No action required. |
| Novartis Pharmaceuticals UK Ltd | No comment. | Comment noted. No action required. |
| Psoriasis Association | No comment. | Comment noted. No action required. |
| Psoriasis and Psoriatic Arthritis Alliance | No. | Comment noted. No action required. |

**The following consultees/commentators indicated that they had no comments on the draft remit and/or the draft scope**

AbbVie

Amgen

Biogen

Janssen