# Health Technology Briefing
# July 2025

# TAR-200 for recurrent, papillary-only, high-risk non-muscle-invasive bladder cancer after treatment with Bacillus Calmette-Guérin therapy

| Company/Developer | Janssen-Cilag Limited, a Johnson & Johnson Company |
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☒ New Active Substance ☐ Significant Licence Extension (SLE)

| NIHRIO ID: 38524 | NICE ID: Not Available | UKPS ID: 674899 |
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## Licensing and Market Availability Plans

Currently in phase III clinical development

## Summary

TAR-200 is in clinical development for treatment of recurrent, papillary-only, high-risk, non-muscle-invasive bladder cancer (NMIBC) after treatment with Bacillus Calmette-Guerin (BCG) therapy. BCG is an immunotherapy drug, which causes the body's immune system to fight cancer cells and is one of the main treatments of NMIBC. NMIBC is a form of bladder cancer which has not spread beyond the lining of the bladder. High-risk NMIBC has a significant chance of progressing to muscle-invasive bladder cancer, which is more dangerous and can spread to other parts of the body. Risk factors are exposure to harmful substances and smoking tobacco. The most common symptom is blood in the urine. Many patients will experience a relapse after treatment with BCG, often meaning they may need to have surgery to remove the bladder.

TAR-200 is a targeted release system that is inserted into the bladder and allows a continued release of drugs to the affected area for 21 days at a time. This allows a localised approach to the cancerous cells within the bladder and lining, and limits exposure to the rest of the body. If licensed, TAR-200 would offer an additional treatment option for adults with recurrent, papillary-only, high-risk NMIBC after treatment with BCG therapy for which there are limited treatment options available.

This briefing reflects the evidence available at the time of writing and a limited literature search. It is not intended to be a definitive statement on the safety, efficacy or effectiveness of the health technology covered and should not be used for commercial purposes or commissioning without additional information. A version of the briefing was sent to the company for a factual accuracy check. The company was available to comment.
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## Proposed Indication

Treatment of recurrent, high-risk, papillary-only, non-muscle-invasive bladder cancer (NMIBC) after treatment with Bacillus Calmette-Guérin (BCG) therapy.[1]

## Technology

### Description

TAR-200 is an investigational targeted-release system designed to provide extended local release of gemcitabine into the bladder.[2] TAR-200 is a small silicone tube that is inserted into the bladder using a urinary placement catheter.[3] Inside the bladder, osmotic pressure regulates the release of gemcitabine from the internal reservoir, allowing the system to function as an osmotic drug pump. The system is designed to provide localised, sustained gemcitabine therapy into the bladder over an extended period, while minimising systemic exposure. TAR-200 is designed to allow for sustained release of gemcitabine over an indwelling period of up to 21 days.[4]

TAR-200 is in clinical development for adults with recurrent, high-risk, papillary-only, NMIBC after treatment with BCG therapy. In the phase III clinical trial (NCT06211764) the TAR-200 delivery system is used to deliver intravesical gemcitabine directly to the bladder every 3 weeks during an induction phase of 24 weeks (8 induction doses) and every 12 weeks during the maintenance phase starting in week 36 for 6 doses.[1]

### Key Innovation

Effective treatment options are limited for patients with recurrent or persistent high-risk NMIBC, including those with BCG unresponsive disease.[5] BCG therapy fails in nearly 40% of patients, leaving them requiring additional interventions such as radical cystectomy.[6] Approximately 20–40% of patients who experience BCG failure will also progress to muscle-invasive disease.[5] Therefore, there is a clear need for effective treatments for these patients. TAR-200 is a novel intravesical drug-releasing system that facilitates prolonged drug-to-urothelial contact, improving absorption across the urothelium into deeper layers of the bladder and targeting tumour tissue.[4,7] Since NMIBC often affects older patients, they may be unwilling or unfit to undergo radical cystectomy. The high rates of recurrence and progression can pose significant morbidity and distress.[2] TAR-200 is an additional treatment option for certain patients with NMIBC, addressing an unmet need for people who have had relatively limited therapeutic alternatives.[8]

If licenced, TAR-200 would offer an additional treatment for patients with recurrent, high-risk, NMIBC after treatment with BCG therapy.

### Regulatory & Development Status

TAR-200 does not have marketing authorisation in the UK/EU for any indication.

TAR-200 has the following regulatory designations/awards for high-risk NMIBC:

- Breakthrough Therapy by the US FDA for Bacillus Calmette-Guérin (BCG)-unresponsive high-risk non-muscle-invasive bladder cancer in December 2023.[9]

TAR-200 is in phase II clinical development for:[10]

- Muscle invasive urothelial carcinoma of the bladder
- Muscle invasive bladder cancer and BCG-naïve high-risk non-muscle invasive bladder cancer in combination with cetrelimab

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## Patient Group

### Disease Area and Clinical Need

NMIBC is defined as a cancer that is present in the lining or the connective tissue beneath the bladder lining. If the cancer grows deeper into the muscle layer of the bladder or beyond, it is classified as muscle-invasive bladder cancer.[11] According to the Tumour, Node, Metastasis classification system, high-risk NMIBC is defined as including stages Ta (cancer is just in the innermost layer of the bladder lining) and T1 (cancer has started to grow into the connective tissue beneath the bladder lining).[12] Papillary-only bladder cancer usually appears as small growths that grow out of the bladder lining.[13] The main symptom of bladder cancer is blood in the urine, but other symptoms may include difficulty passing urine, pain in the bones, lower back or abdomen, feeling tired and unintentional weight loss.[14] Bladder cancer may be caused by exposure to toxic substances such as aromatic amines, polycyclic aromatic hydrocarbons and chlorinated hydrocarbons, but tobacco smoking is the most significant risk factor and accounts for approximately 50% of cases.[15] Although it can occur at any age, most people diagnosed with bladder cancer are over 55 years.[16]

Around 10,500 people are diagnosed with bladder cancer in the UK every year. It is the 11th most common cancer in the UK, and the 7th most common cancer in men.[11] In England in 2020 there were 8,752 newly diagnosed cases of for malignant neoplasm of the bladder (ICD-10 code C67). Of this, 6,391 were males and 2,361 were females. The age-standardised mortality in 2020 was 2,781 males and 1,391 females.[17] The age-standardised 1-year and 5–year survival rates for patients diagnosed with bladder cancer in England in 2017 were 74.1% and 52.6% respectively.[18] In England, 2023-2024, there were 70,218 finished consultant episodes (FCEs) and 66,254 admissions for malignant neoplasm of the bladder, resulting in 46,193 day cases and 87,342 FCE bed days.[19]

### Recommended Treatment Options

There is currently no treatment option recommended by the National Institute for Health and Care Excellence (NICE) for recurrence of papillary-only high-risk NMIBC after BCG therapy. NICE recommends synergo and electrically stimulated intravesical chemotherapy for BCG unresponsive, recurrent, high-risk NMIBC but only with special arrangements for clinical governance, consent, and audit or research.[20,21]

The European Association of Urology (EAU) recommends radical cystectomy and intravesical chemotherapy for BCG-recurrent, high-risk NMIBC.[15]

## Clinical Trial Information

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| Trial | **SunRISe-5**, NCT06211764; A phase 3, randomised, open-label, multi-centre study evaluating the efficacy and safety of TAR-200 versus investigator's choice of intravesical chemotherapy in participants who received Bacillus Calmette-Guérin (BCG) and recurred with high-risk non-muscle-invasive bladder cancer (HR-NMIBC) and who are ineligible for or elected not to undergo radical cystectomy.<br>**Phase III:** recruiting<br>**Location(s):** 7 EU countries, UK, USA and other countries<br>**Primary completion date:** November 2030 |
| Trial Design | Randomised, parallel assignment, open label |

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| Population | N=250 (estimated); adults with histologically confirmed diagnosis by local pathology of recurrent, papillary-only high-risk non-muscle-invasive bladder cancer who are ineligible for or have elected not to undergo radical cystectomy; aged 18 years and over. |
| Intervention(s) | TAR-200 intravesically every 3 weeks during an induction phase (8 doses) and every 12 weeks during a maintenance phase (6 doses) |
| Comparator(s) | • Mitomycin C intravesically<br>• Gemcitabine intravesically |
| Outcome(s) | Primary outcome: disease-free survival<br><br>See trial record for full list of other outcomes |
| Results (efficacy) | - |
| Results (safety) | - |

## Estimated Cost

The cost of TAR-200 is not yet known.

## Relevant Guidance

### NICE Guidance

- NICE technology appraisal in development. Pembrolizumab with BCG for treating high-risk non-muscle-invasive bladder cancer. [GID-TA11300]. Expected date of issue to be confirmed.
- NICE clinical guideline. Bladder cancer: diagnosis and management. (NG2). February 2015.
- NICE quality standard. Bladder cancer. (QS106). December 2015.
- NICE interventional procedure guidance. Transurethral laser ablation for recurrent non-muscle-invasive bladder cancer. (IPG656). July 2019.
- NICE interventional procedure guidance. Electrically stimulated intravesical chemotherapy for non-muscle-invasive bladder cancer (IPG638). July 2019.
- NICE Medical Technologies Guidance (MTG61) Synergo for non-muscle-invasive bladder cancer. November 2021.

### NHS England (Policy/Commissioning) Guidance

- NHS England. 2013/14 NHS Standard Contract for Cancer: Specialised Kidney, Bladder and Prostate Cancer Services (Adults). B14/S/a.

### Other Guidance

- Gontero P, Birtle A, Comperat E, Dominguez Escrig JL, Liedberg F, Masson-Lecomte, P et al. European Association of Urology (EAU) Guidelines on Non-muscle-invasive Bladder Cancer (TaT1 and CIS). 2025.[15]

## References

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1 Clinicaltrials.gov. *A Phase 3, Randomized, Open-label, Multi-center Study Evaluating the Efficacy and Safety of TAR-200 Versus Investigator's Choice of Intravesical Chemotherapy in Participants Who Received Bacillus Calmette-Guérin (BCG) and Recurred With High-risk Non-muscle-invasive Bladder Cancer (HR-NMIBC) and Who Are Ineligible for or Elected Not to Undergo Radical Cystectomy*. 2024. Available from: https://clinicaltrials.gov/study/NCT06211764 [Accessed 2024/04/09/].

2 Johnson and Johnson. *TAR-200 monotherapy shows greater than 80% complete response rate in patients with high-risk non–muscle-invasive bladder cancer*. 2024. Available from: https://www.jnj.com/media-center/press-releases/tar-200-monotherapy-shows-greater-than-80-complete-response-rate-in-patients-with-high-risk-non-muscle-invasive-bladder-cancer [Accessed 07 May 2025].

3 First World Pharma. *Physician Views Preview: A bladder cancer breakthrough? — urologists react to J&J's tumour-targeted drug delivery device*. 2025. Available from: https://firstwordpharma.com/story/5959269 [Accessed 29 June 2025].

4 Daneshmand S, Kamat AM, Shore ND, Meeks JJ, Galsky MD, Jacob JM, et al. Development of TAR-200: A novel targeted releasing system designed to provide sustained delivery of gemcitabine for patients with bladder cancer. *Urologic Oncology: Seminars and Original Investigations*. 2025. Available from: https://doi.org/10.1016/j.urolonc.2024.12.264.

5 Kamat AM, Neal S, Noah H, Shaheen A, Hiroyuki N, Shahrokh S, et al. KEYNOTE-676: Phase III study of BCG and pembrolizumab for persistent/recurrent high-risk NMIBC. *Future Oncology*. 2020;16(10):507-16. Available from: https://doi.org/10.2217/fon-2019-0817.

6 Filon M, Schmidt B. New Treatment Options for Non–Muscle-Invasive Bladder Cancer. *American Society of Clinical Oncology Educational Book*. 2025;45(2):e471942. Available from: https://doi.org/10.1200/edbk-25-471942.

7 Society of Urologic Oncology Inc. *PENELOPE: Tissue penetration of gemcitabine phosphate metabolites following tar-200 administration vs standard intravesical instillation in minipigs*. 2024. Available from: https://suo-abstracts.secure-platform.com/a/gallery/rounds/21/details/3613 [Accessed 18 Jun 2025].

8 Cancer Network. *FDA Receives NDA for TAR-200 in BCG-Unresponsive High-Risk NMIBC*. 2025. Available from: https://www.cancernetwork.com/view/fda-receives-nda-for-tar-200-in-bcg-unresponsive-high-risk-nmibc [Accessed 07 May 2025].

9 PR Newswire. *Johnson & Johnson's Investigational TAR-200 Granted U.S. FDA Breakthrough Therapy Designation for the Treatment of High-Risk Non-Muscle-Invasive Bladder Cancer*. 2023. Available from: https://www.prnewswire.com/news-releases/johnson--johnsons-investigational-tar-200-granted-us-fda-breakthrough-therapy-designation-for-the-treatment-of-high-risk-non-muscle-invasive-bladder-cancer-302005075.html [Accessed 07 May 2025].

10 Clinicaltrials.gov. *Search results: tar-200 | Phase: 2, 3*. 2025. Available from: https://clinicaltrials.gov/search?cond=tar-200&aggFilters=phase:2%203 [Accessed 07 May 2025].

11 Cancer Research UK. *What is Bladder Cancer?* 2022. Available from: https://www.cancerresearchuk.org/about-cancer/bladder-cancer/about [Accessed 07 May 2025].

12 Cancer Research UK. *Stages of bladder cancer*. 2025. Available from: https://www.cancerresearchuk.org/about-cancer/bladder-cancer/types-stages-grades/stages [Accessed 29 May 2025].

13 Cancer Research UK. *Types of Bladder Cancer*. 2025. Available from: https://www.cancerresearchuk.org/about-cancer/bladder-cancer/types-stages-grades/types [Accessed 15 June 2025].

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14 Cancer Research UK. *Symptoms of Bladder Cancer*. 2025. Available from: https://www.cancerresearchuk.org/about-cancer/bladder-cancer/symptoms [Accessed 29 May 2025].

15 Gontero P, Birtle A, Comperat E, Dominguez Escrig J, Liedberg F, Mariappan P, et al. EAU Guidlines on Non-muscle-invasive Bladder Cancer (TAT1 and CIS). *ISBN 978-94-92671-23-3*. 2024. https://d56bochluxqnz.cloudfront.net/documents/full-guideline/EAU-Guidelines-on-Non-muscle-invasive-Bladder-Cancer-2025.pdf.

16 Mayo Clinic. *Bladder Cancer*. 2024. Available from: https://www.mayoclinic.org/diseases-conditions/bladder-cancer/symptoms-causes/syc-20356104 [Accessed 07 May 2025].

17 NHS Digital. *Cancer Registration Statistics, England 2020*. 2020. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/cancer-registration-statistics/england-2020#resources [Accessed 29 May 2025].

18 Office for National Statistics. *Cancer survival in England - adults diagnosed*. 2019. Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/datasets/cancersurvivalratescancersurvivalinenglandadultsdiagnosed [Accessed 07 May 2025].

19 National Health Service (NHS) Digital. *Hospital Admitted Patient Care Activity, 2023-2024: Diagnosis*. 2024. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/hospital-admitted-patient-care-activity/2023-24#chapter-index [Accessed 07 May 2025].

20 National Institute for Health and Care Excellence (NICE). *Synergo for non-muscle-invasive bladder cancer* (*MTG61)*. Available from: https://www.nice.org.uk/guidance/mtg61/chapter/1-Recommendations [Accessed 07 May 2025].

21 National Institute for Health and Care Excellence (NICE). *Electrically stimulated intravesical chemotherapy for non-muscle-invasive bladder cancer* (*IPG638)*. Available from: https://www.nice.org.uk/guidance/ipg638/chapter/2-The-condition-current-treatments-and-procedure [Accessed 07 May 2025].

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