Randomized Comparison of Magnetic Resonance Imaging Versus Transurethral Resection for Staging New Bladder Cancers: Results From the Prospective **BladderPath Trial**

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Bryan RT, Liu W, Pirrie SJ, Amir R, et al.,BladderPath Collaborative Group. Randomized Comparison of Magnetic Resonance Imaging Versus Transurethral Resection for Staging New Bladder Cancers: Results From the Prospective BladderPath Trial. J Clin Oncol. 2025 Apr 20;43(12):1417-1428. doi: 10.1200/JCO.23.02398. Epub 2025 Jan 14. Erratum in: J Clin Oncol. 2025 Apr 23:JCO2500779. doi: 10.1200/JCO-25-00779. PMID: 39808757; PMCID: PMC12005870.

Rationale and need for this study

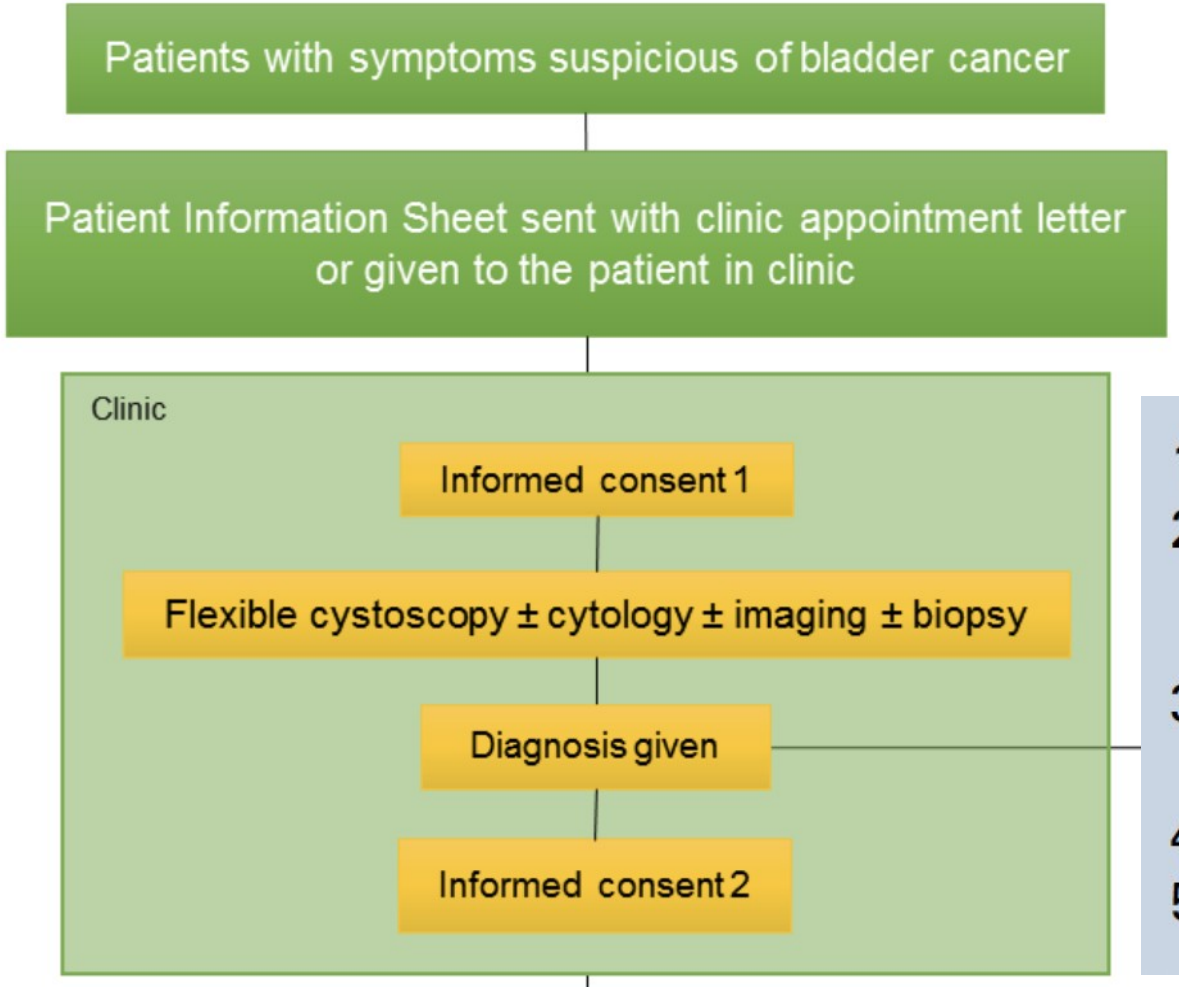
- Survival rates for MIBC - not improved over the years
- In structured health systems, delay to radical treatment
- Understaging of T1 patients (30-46% T2 at RC) during TURBT
- Artifacts in local staging post TURBT lead to inaccuracies

Hypothesis

- What if we separate NMIBC & MIBC at diagnosis?
- Will a combination of mpMRI + office cystoscopy & biopsy remove the need for TURBT?
- Will it help to select cases who need faster treatment?
- Will it save time and provide faster access to radical treatment?

Materials and methods:

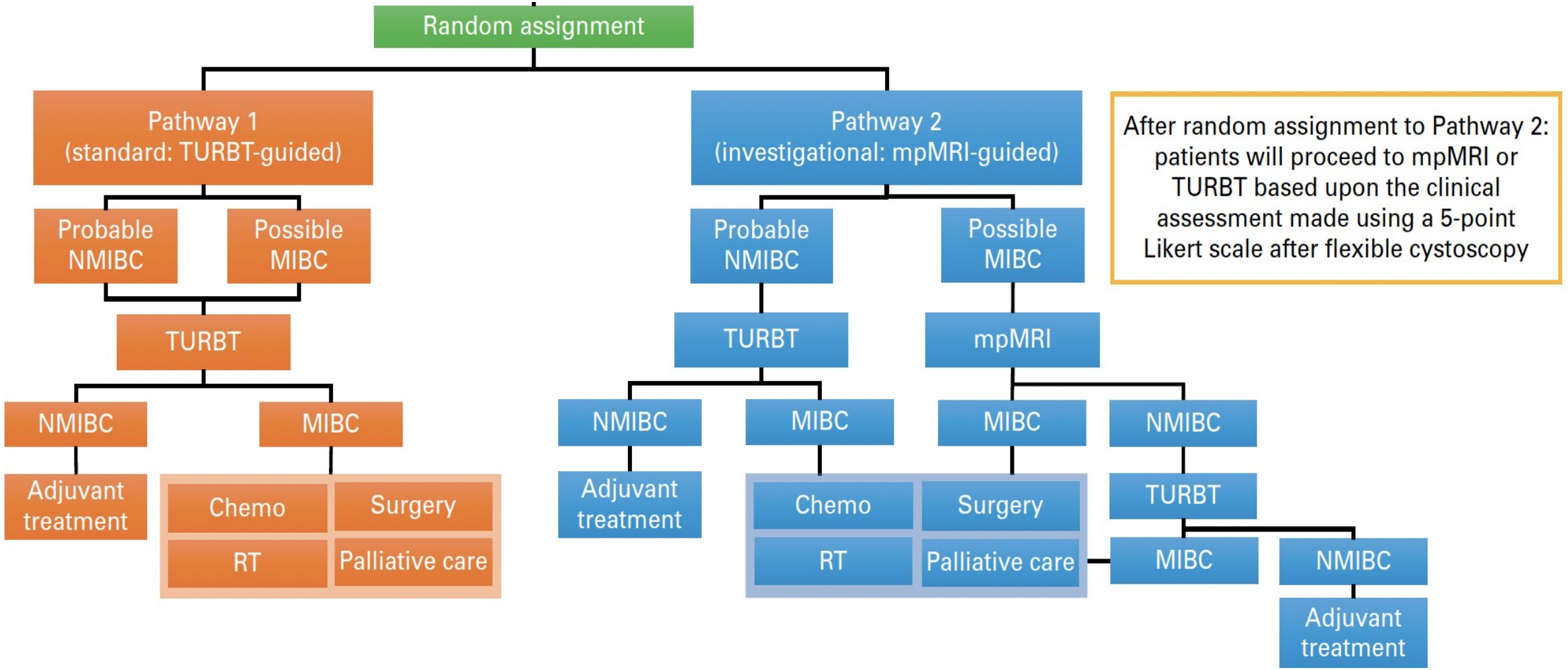
17 UK hospitals, open label RCT, 2018-2021, ISRCTN 35296862.



Likert scale

1 = Strongly agree that the lesion is NMIBC
2 = Agree that the lesion is NMIBC

3 = Neither agree or disagree the lesion is NMIBC or MIBC
4 = Agree that the lesion is MIBC
5 = Strongly agree that the lesion is MIBC



After mpMRI, TURBT was permitted at clinicians' discretion to determine histologic variants, for tumor debulking before chemoradiotherapy, diagnostic uncertainty, to assess operability, carcinoma in situ (CIS) assessment, prostatic urethral biopsies for neobladder consideration, restaging after neoadjuvant chemotherapy, or for symptom management.

Outcomes

Feasibility stage

Primary outcome:

- Minimum 80% in P2 complete as planned

Secondary outcomes:

- Proportion who completed as planned in each
- Recruitment and retention rates
- Counts of each type of correct treatment
- Target sample size - 150 & 38 with possible MIBC in Pathway 2

TTCT stage

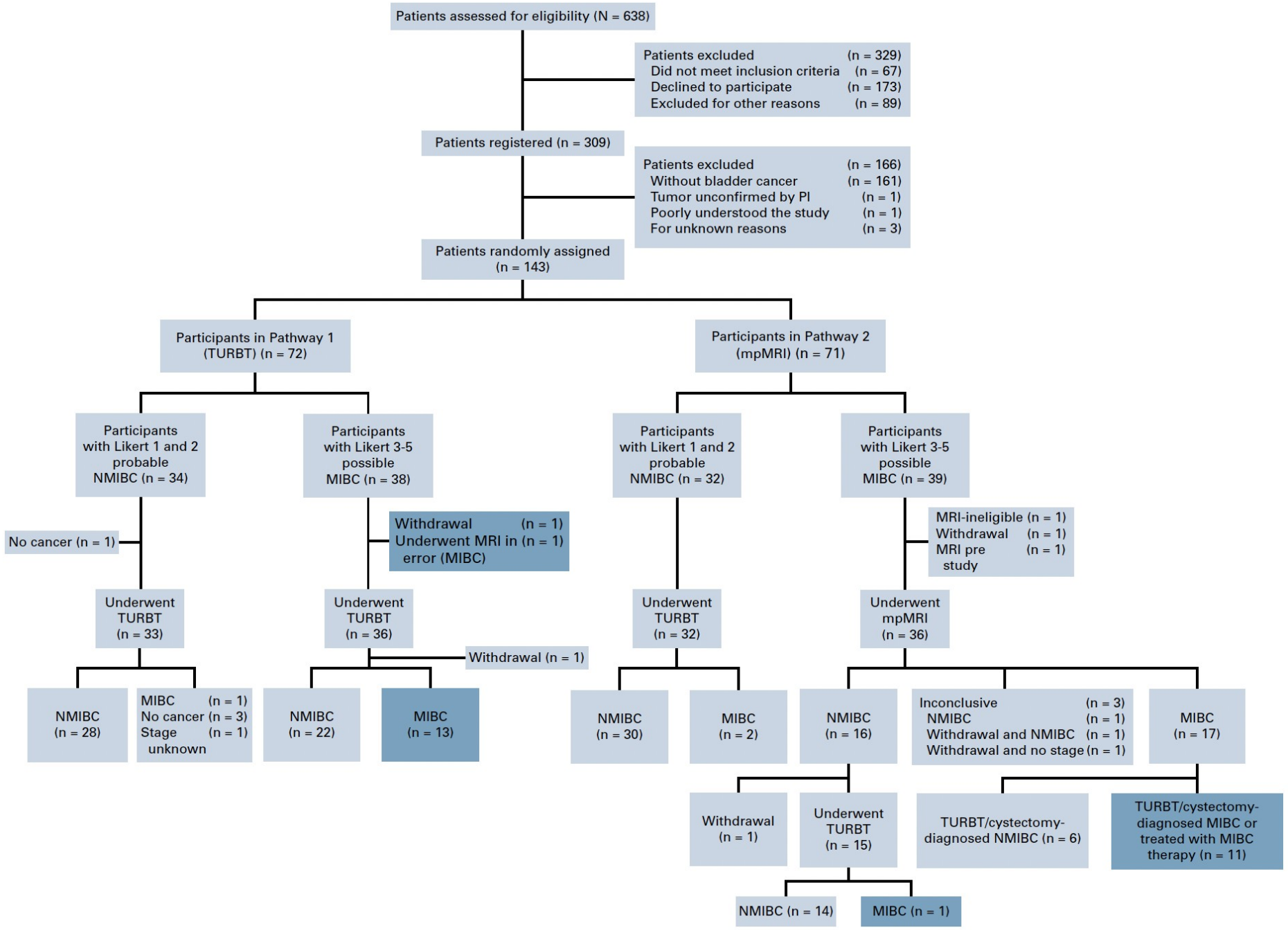
Primary outcome:

- TTCT for possible MIBC and confirmed MIBC: 100 → 70 days

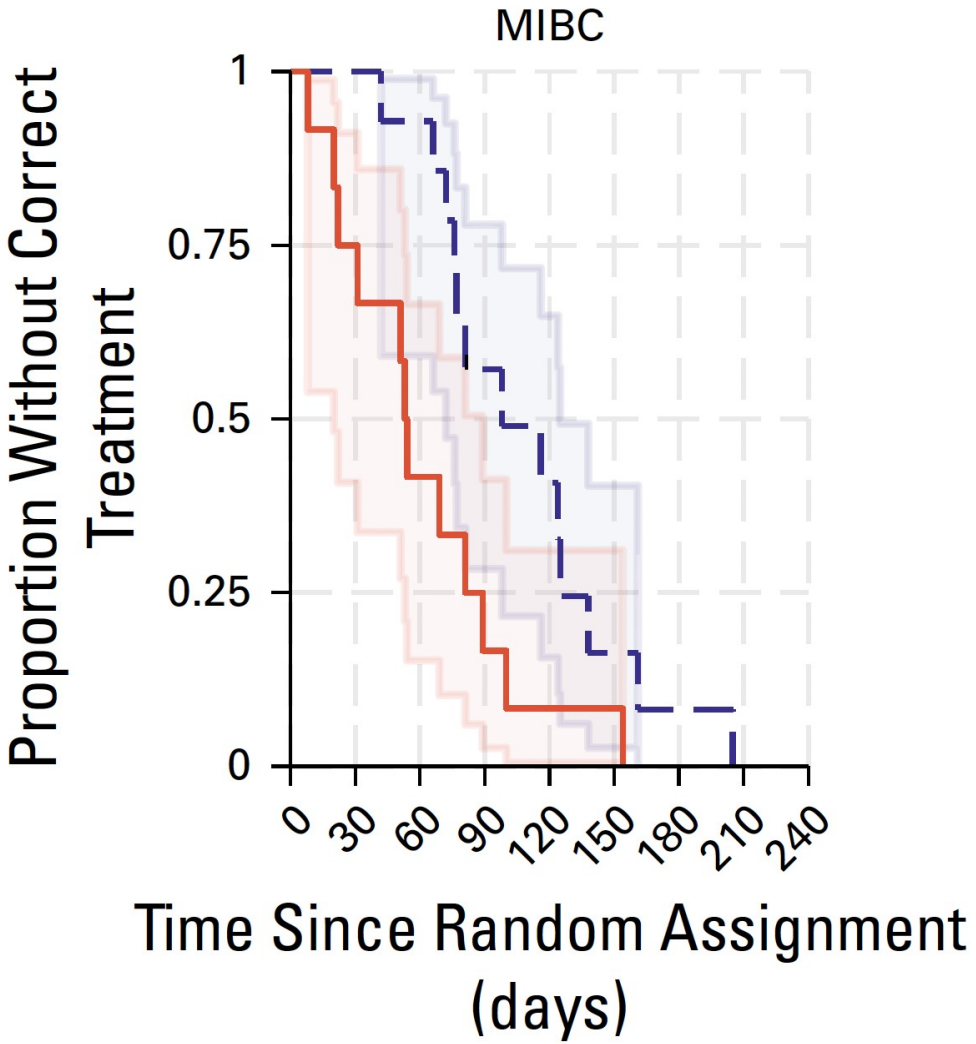
Secondary outcomes:

- TTCT for all participants
- TTCT for probable NMIBC confirmed as NMIBC

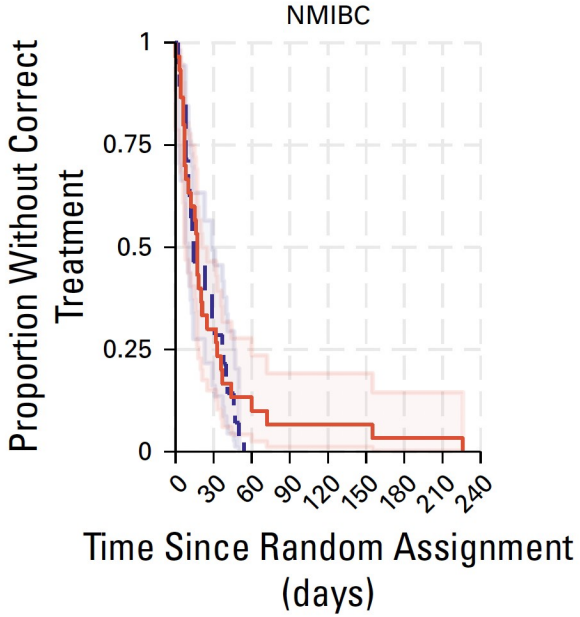
Results

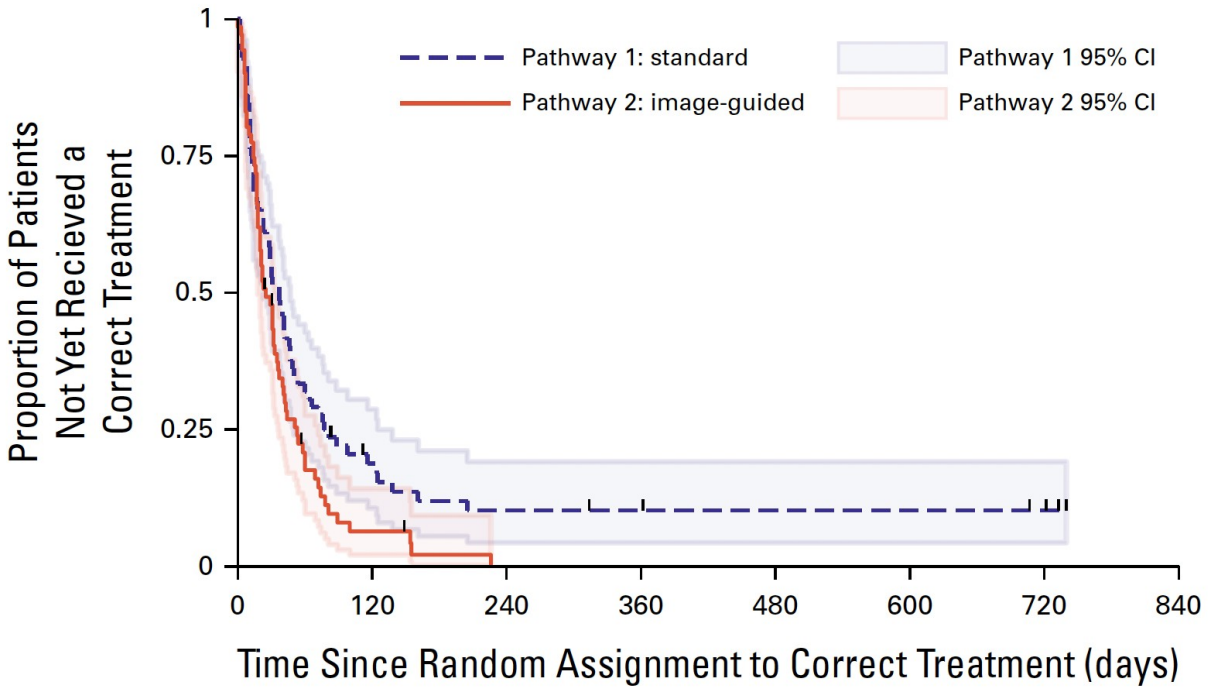

Patients assessed for eligibility (N = 638)
Patients excluded (n = 329)
Did not meet inclusion criteria (n = 67)
Declined to participate (n = 173)
Excluded for other reasons (n = 89)
Patients registered (n = 309)
Patients excluded (n = 166)
Without bladder cancer (n = 161)
Tumor unconfirmed by PI (n = 1)
Poorly understood the study (n = 1)
For unknown reasons (n = 3)
Patients randomly assigned (n = 143)
Participants in Pathway 1 (TURBT) (n = 72)
Participants in Pathway 2 (mpMRI) (n = 71)
Participants with Likert 1 and 2 probable NMIBC (n = 34)
Participants with Likert 3-5 possible MIBC (n = 38)
Participants with Likert 1 and 2 probable NMIBC (n = 32)
Participants with Likert 3-5 possible MIBC (n = 39)
No cancer (n = 1)
Withdrawal (n = 1)
Underwent MRI in error (MIBC) (n = 1)
MRI-ineligible (n = 1)
Withdrawal (n = 1)
MRI pre study (n = 1)
Underwent TURBT (n = 33)
Underwent TURBT (n = 36)
Underwent TURBT (n = 32)
Underwent mpMRI (n = 36)
Withdrawal (n = 1)
NMIBC (n = 28)
MIBC (n = 1)
No cancer (n = 3)
Stage unknown (n = 1)
NMIBC (n = 22)
MIBC (n = 13)
NMIBC (n = 30)
MIBC (n = 2)
NMIBC (n = 16)
Inconclusive (n = 3)
NMIBC (n = 1)
Withdrawal and NMIBC (n = 1)
Withdrawal and no stage (n = 1)
MIBC (n = 17)
Withdrawal (n = 1)
Underwent TURBT (n = 15)
TURBT/cystectomy-diagnosed NMIBC (n = 6)
TURBT/cystectomy-diagnosed MIBC or treated with MIBC therapy (n = 11)
NMIBC (n = 14)
MIBC (n = 1)

- Feasibility stage – 96% patients followed protocol
- mpMRI – 92% compliant with VIRADS protocol
- TTCT stage - 26 MIBC – 25 correct treatment at median 77 days
- 98 days (P1) vs 53 days (P2)
- HR in favor of Pathway 2 versus Pathway 1 of 2.9 (95% CI, 1.0 to 8.1)



- 58 NMIBC - median TTCT 16 days (95% CI, 11 to 23)
- Median TTCT P1 - 14 days (95% CI, 10 to 29) vs P2 - 17 days (95% CI, 8 to 25)
- 91.6% received correct treatment
- Median TTCT for all 143 participants - 31 days (95% CI, 22 to 37)
- Median TTCT for P1 (n = 72) - 37 days (95% CI, 23 to 47) vs P2 (n = 71) - 25-days (95% CI, 18 to 35) ((log-rank p = .03)





Discussion and analysis

- Slow pathways - worse prognosis for MIBC - reflect the need for TURBT
- UK - 144 days - referral to radical therapy, 48% wait >180 days, US - 69 days to radical treatment, Canada - 56 days to see a urologist and 65 to cystectomy
- Delay ≥56 days to NACT - pathologic upstaging, Diagnosis to radical cystectomy - increased mortality
- Only seeks to address the delay in diagnosis, doesn’t talk about sensitivity, specificity

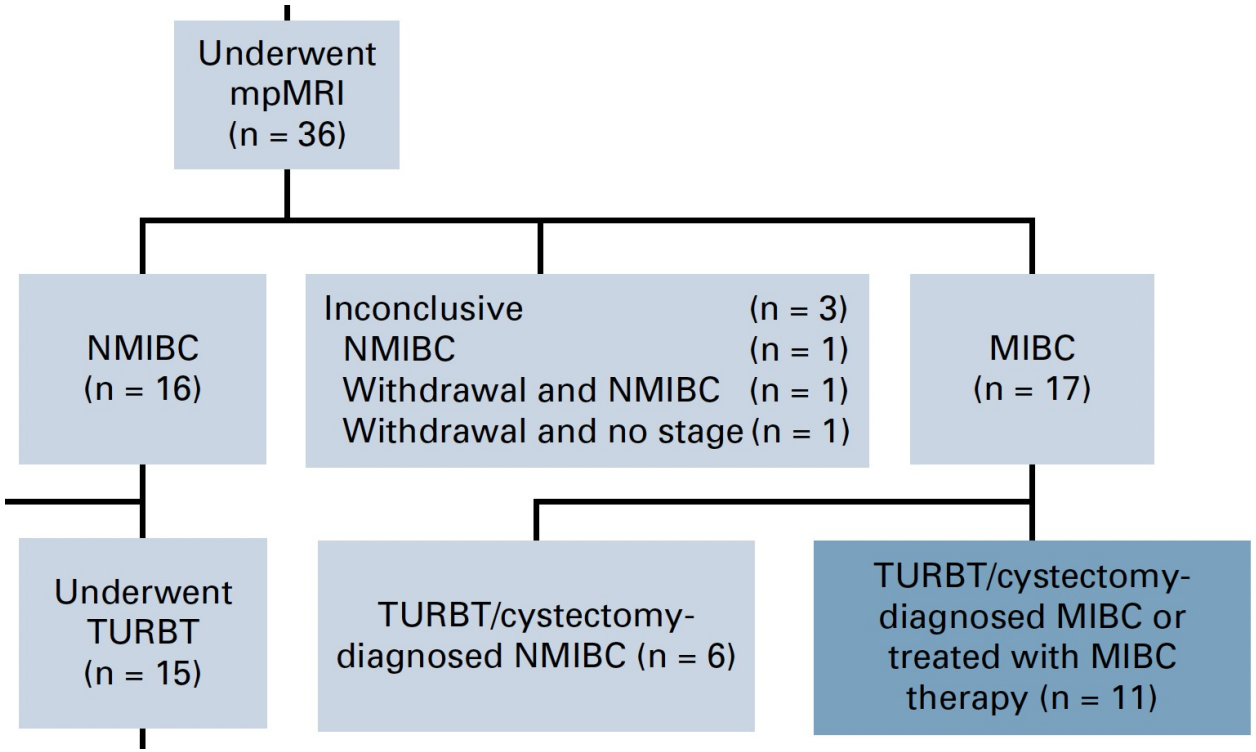
- The authors demonstrate that it is safe to omit TURBT in a subset of patients visually assessed to have MIBC

- This leads to shortening the TTCT for these patients which will hopefully lead to better outcomes

Limitations

- TURBT wasn’t done
- Pathologic stage of those who had NACT, palliation or RT were unknown
- Symptom control – hematuria, pain, LUTS
- Histologic characterization – variant histology
- Maximal TURBT before TMT

- VI-RADS introduced during the study
- VI-RADS needs practice and volumes for accuracy
- Considerations of increased workload at RAPID clinics
- Potentially reduces costs



Conclusion

- mpMRI needs greater utilization in the bladder cancer pathway
- Learning curves present
- Saves time in high volume centers and in case of delays in treatment
- Potentially cost saving for public health systems