

Reducing prophylactic antibiotic use for intradetrusor injections of Botulinum toxin



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1. BACKGROUND

Botulinum toxin (Botox) is used as an effective treatment for patients suffering with refractory overactive bladder.

Patients attend a clinic at Basingstoke and North Hampshire Hospital, Hampshire Hospitals NHS Foundation Trust (HHFT) to receive injections of Botox to the detrusor muscle of their bladder via a cystoscopy.

As bacteriuria, the presence of bacteria in urine may reduce efficacy and lead to urinary tract infection (UTI), antibiotic prophylaxis is commonly prescribed for patients undergoing this procedure. However, there is no National Institute for Health and Care Excellence (NICE) guidance to support this.

Ciprofloxacin is the antibiotic prophylactically prescribed at HHFT. This is a broad-spectrum antibiotic, which does present other side effects, such as increasing the risk of *C. difficile* infection and causing muscle weakness.

4. RESULTS

The pilot study established the rate of asymptomatic bacteriuria in the patients assessed as 25%

It also assessed the negative predictive value of urine appearance and dipstick test results to diagnose bacteriuria, which were 84% and 88% respectively.

Lab Number	Appearance	Dipstick Result	Culture Result
21U34081	Clear	Negative	<10 ⁵ Enterococcus
21U30591	Clear	Negative	>10 ⁵ coliform
21U39084	Clear	Negative	>10 ⁵ coliform
21U44042	Clear	LEU+	10 ⁴ E. coli
21U30599	Clear	Negative	No growth
21U33191	Clear	Negative	No growth
21U33193	Clear	Negative	No growth
21U34069	Clear	Negative	No growth
21U34100	Clear	Negative	No growth
21U34111	Clear	Negative	No growth
21U34098	Clear	Negative	No growth
21U34099	Clear	Negative	No growth
21U39080	Clear	Negative	No growth
21U39087	Clear	Negative	No growth
21U39081	Clear	Negative	No growth
21U39082	Clear	Negative	No growth
21U44041	Clear	Negative	No growth
21U30594	Clear	Negative	No significant growth
21U30592	Clear	Negative	No significant growth
21U33192	Clear	Negative	No significant growth
21U33190	Clear	Negative	No significant growth
21U33373	Clear	Negative	No significant growth
21U39088	Clear	Negative	No significant growth
21U39086	Clear	Negative	No significant growth
21U44043	Clear	Negative	No significant growth
21U44058	Turbid	LEU+ NIT+	<10 ⁵ E. coli
21U44044	Turbid	LEU+ NIT+	>10 ⁵ E. coli
21U39085	Cloudy	LEU+	>10 ⁵ E. coli

2. AIM

To reduce prophylactic antibiotic use for intradetrusor injections of Botox in female patients attending a clinic in Basingstoke and North Hampshire Hospital by 75% by 2022.

3. METHOD

In a pilot study, a urine sample was collected on the day of the procedure from each of the patients before antibiotics were taken. Other information collected at this time included the appearance of the urine (clear or turbid) and results of a urine dipstick test.

The urines were cultured by the Microbiology Department to assess for the growth of bacteria.

A literature review was conducted to determine the evidence base for and against antibiotic prophylaxis for intradetrusor injections of Botox.

5. CHANGES

Following the results of the pilot study, a further prospective study has been agreed to evaluate the risk of UTI when antibiotic prophylaxis is not given, in patients without risk factors.

Patients will have a urine collected 7 days before the procedure to investigate for bacteriuria.

A further sample will be taken on the day of treatment, if this is clear in appearance and the dipstick test is negative, an antibiotic will not be given.

Patients will be advised to collect a sample 7 days after and will be followed up with a phone call to assess for UTI symptoms.

A further follow up phone call will be also made at 6 weeks after the procedure.

6. SUMMARY

Antibiotic prophylaxis may not be necessary but requires further investigation.

A follow-up study is ongoing until early 2022 to assess the safety of withholding prophylaxis in eligible patients.

Discussion of this subject has prompted suggestions for antibiotic stewardship in teams which were initially hesitant.

Antibiotic stewardship, following evidence-based practice is necessary to prevent increasing antibiotic resistance.

25%

Patients in the pilot study with asymptomatic bacteriuria

84%

Negative predictive value of urine appearance for bacteriuria

88%

Negative predictive value of dipstick test for bacteriuria

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