

U. PORTO

FMUP FACULDADE DE MEDICINA
UNIVERSIDADE DO PORTO

MESTRADO INTEGRADO EM MEDICINA

2019/2020

Maria Inês Portugal Rodrigues
Treatment of Idiopathic Overactive
Bladder with Botulinum Toxin: Real-
life Results and Patients'
Expectations/
Tratamento da Bexiga Hiperativa
Idiopática com Toxina Botulínica:
Resultados da Prática Clínica e
Expectativas das Pacientes

Março, 2020

FMUP

U. PORTO

FMUP FACULDADE DE MEDICINA
UNIVERSIDADE DO PORTO

Maria Inês Portugal Rodrigues

Treatment of Idiopathic Overactive Bladder with Botulinum Toxin:

Real-life Results and Patients' Expectations/

Tratamento da Bexiga Hiperativa Idiopática com Toxina Botulínica:

Resultados da Prática Clínica e Expectativas das Pacientes

Mestrado Integrado em Medicina

Área: Ciências Médicas e da Saúde- Medicina Clínica

Tipologia: Dissertação

Trabalho efetuado sob a Orientação de:

Professor Doutor Carlos Silva

E sob a Coorientação de:

Dr. Pedro Abreu Mendes

Trabalho organizado de acordo com as normas da revista:

Porto Biomedical Journal

Março, 2020

FMUP

Eu, Maria João Portugal Rodrigues, abaixo assinado, nº mecanográfico 201406321, estudante do 6º ano do Ciclo de Estudos Integrado em Medicina, na Faculdade de Medicina da Universidade do Porto, declaro ter atuado com absoluta integridade na elaboração deste projeto de opção.

Neste sentido, confirmo que **NÃO** incorri em plágio (ato pelo qual um indivíduo, mesmo por omissão, assume a autoria de um determinado trabalho intelectual, ou partes dele). Mais declaro que todas as frases que retirei de trabalhos anteriores pertencentes a outros autores, foram referenciadas, ou redigidas com novas palavras, tendo colocado, neste caso, a citação da fonte bibliográfica.

Faculdade de Medicina da Universidade do Porto, 01/02/2020

Assinatura conforme cartão de identificação:

Maria João Portugal Rodrigues

NOME

Maria Inês Portugal Rodrigues

NÚMERO DE ESTUDANTE

E-MAIL

201406321

Inesp_rodrigues@hotmail.com

DESIGNAÇÃO DA ÁREA DO PROJECTO

Ciência Médicas e da Saúde> Medicina Clínica

TÍTULO DISSERTAÇÃO/MONOGRRAFIA (riscar o que não interessa)

Treatment of Idiopathic Overactive Bladder with Botulinum Toxin: Real-life Results and Patients' Expectations

ORIENTADOR

Carlos Manuel Pires Martins da Silva

COORDINADOR (se aplicável)

Pedro Filipe Pinto de Abreu Mendes

ASSINALE APENAS UMA DAS OPÇÕES:

É AUTORIZADA A REPRODUÇÃO INTEGRAL DESTA TRABALHO APENAS PARA EFEITOS DE INVESTIGAÇÃO, MEDIANTE DECLARAÇÃO ESCRITA DO INTERESSADO, QUE A TAL SE COMPROMETE.	<input checked="" type="checkbox"/>
É AUTORIZADA A REPRODUÇÃO PARCIAL DESTA TRABALHO (INDICAR, CASO TAL SEJA NECESSÁRIO, Nº MÁXIMO DE PÁGINAS, ILUSTRAÇÕES, GRÁFICOS, ETC.) APENAS PARA EFEITOS DE INVESTIGAÇÃO, MEDIANTE DECLARAÇÃO ESCRITA DO INTERESSADO, QUE A TAL SE COMPROMETE.	<input type="checkbox"/>
DE ACORDO COM A LEGISLAÇÃO EM VIGOR, (INDICAR, CASO TAL SEJA NECESSÁRIO, Nº MÁXIMO DE PÁGINAS, ILUSTRAÇÕES, GRÁFICOS, ETC.) NÃO É PERMITIDA A REPRODUÇÃO DE QUALQUER PARTE DESTA TRABALHO.	<input type="checkbox"/>

Faculdade de Medicina da Universidade do Porto, 01/02/2021

Assinatura conforme cartão de identificação: Maria Inês Portugal Rodrigues

Dedicatória

Para a minha avó, Olga: dedico-lhe todo o meu trabalho nos últimos seis anos e, particularmente, esta dissertação. Qualquer que seja a distância, estará para sempre comigo.

Quero agradecer ao meu orientador, o Professor Carlos Silva, por ter aceitado orientar-me e pela sua disponibilidade e ao meu coorientador, o Dr. Pedro Abreu Mendes, por ter feito deste trabalho dele e pela sua dedicação.

Aos meus pais, Ivone e Antero, pela paciência inesgotável e amor incondicional. Foi um percurso muito longo, que teria sido impossível sem eles. Nunca lhes poderei agradecer o suficiente tudo aquilo que fizeram por mim, mas vou tentar. Agradeço também ao meu irmão, Miguel.

Ao Carlos, o meu companheiro de todas as viagens, principalmente desta tão longa, e porto seguro. És o meu preferido. “Era capaz de imaginar a vida, sem ela? E posso dizer que não sei como iria viver. Viveria evidentemente, mas não sei como.” José Saramago.

Aos meus amigos e colegas, que tornaram estes seis anos inesquecíveis e contribuíram para esta conquista.

Treatment of Idiopathic Overactive Bladder with Botulinum Toxin: Real-life Results and Patients' Expectations

Portugal-Rodrigues, Inês²; Abreu-Mendes, Pedro^{1 2}; Vale, Luis^{1 2}; Cruz, Francisco^{1 2}
Dinis, Paulo^{1 2}; Antunes-Lopes, Tiago^{1 2}; Martins-Silva, Carlos^{1 2}

¹Serviço de Urologia, Centro Hospitalar Universitário de São João, Porto

²Faculdade de Medicina da Universidade do Porto

Corresponding author: Abreu-Mendes, Pedro (pedromendes.uc@gmail.com)

Abstract

Background

Overactive bladder (OAB) is a prevalent syndrome affecting 11%-16% of the adult population. When first-line pharmacological therapy is not effective, intradetrusorial injections of Onabotulinumtoxin A (BTX-A) might have an important role in symptoms control. The aim of this study was to assess the efficacy and safety of intra-detrusor injections of 100U BTX-A in real clinical practice, among women with idiopathic OAB (iOAB).

Methods

A retrospective study, based on clinical diaries in 136 iOAB female patients, with or without urinary incontinence, submitted to BTX-A injections, between 2005 and 2018 in a tertiary university hospital. A positive response was considered only when the patient mentioned having great improvement after the injection, otherwise, it was considered negative.

Results

A positive response was obtained in 90 patients (66%) after the first injection. Women with positive response after the first treatment had 7.5 times more chances to improve with the second ($p=0.01$). Discontinuation of the therapy after the first injection was not dependent on the presence of incontinence at baseline ($p=0.73$) nor it was related to age ($p=0.6$). On univariate analyses, none of the parameters evaluated was useful of predicting successful response, although there was a trend in women who had had a previous midurethral sling (MUS) surgery for stress urinary incontinence (SUI), to have a lower chance of having a positive response after the first injection ($p=0.06$)

Thirty-nine women (29%) had at least one adverse event, urinary tract infection (UTI) and straining to void were the most frequent. Women above 65 y.o. had less risk of developing a UTI ($p=0.04$).

Conclusion

In real clinical practice, BTX-A injection is an effective and safe treatment, capable of improving patients' quality of life. Moreover, responding to the first injection seems to predict good clinical outcomes in the second treatment. This procedure can be done with minimal restrictions.

Introduction

Overactive bladder (OAB) is a prevalent syndrome affecting 11%-16% of the adult population and can even be more overwhelming in the elderly (1). It has a significant impact on the quality of life, particularly in sleep disturbance, mental health-related issues and decreased work productivity (2, 3). OAB is characterized by urgency, the core symptom, with or without urgency urinary incontinence, usually with increased daytime frequency and nocturia (4). Although urgency urinary incontinence (UI) may suggest detrusor overactivity, it is not necessary to urodynamically demonstrate involuntary contractions of the muscle (5). OAB is coined as idiopathic (iOAB) when a specific metabolic or pathologic condition that can be the cause is not identified (3).

OAB first-line treatment includes lifestyle changes and behavioural therapy. When these measures are insufficient, the pharmacological prescription is the next step (2). The first-line pharmacologic option is monotherapy with antimuscarinics or β 3-adrenoceptor agonists, while a combination of drugs from both classes can be effective after its failure (6, 7).

In patients with refractory or intolerant to antimuscarinics or β 3-adrenoceptor agonists, evidence supports the use of intravesical injection of 100U of onabotulinumtoxinA (BTX-A) as second-line therapy (8-12). The injections, in between 10 to 20 sites, are done directly into the detrusor muscle, preventing its contractility modulating both efferent and afferent pathways, resulting in a decrease of frequency and number of incontinence episodes (13, 14). This treatment has a success rate ranged from 60% to 80% (15) and is considered safe, durable and cost-effective(11, 13, 16). However, some adverse events (AE) might happen, such as urinary tract infection (UTI) and urinary retention (16-18).

Unfortunately, not every patient benefit from this minimally invasive therapeutic option (19). Therefore, it is important to understand if there are any clinical or non-clinical parameters predicting a good outcome when offering it (20).

Our aim was to assess the efficacy and safety of intra-detrusor injections of 100U BTX-A in real clinical practice. Additionally, another objective was to pursue predictors of positive response and to identify risk factors associated with AE, in order to level-up the selection of patients proposed to BTX-A treatment.

Materials and Methods

This was a retrospective study including 136 iOAB women, with or without UI (OAB wet/DRY) who were treated with an intravesical injection of 100 U of BTX-A, between 2005 and 2018, in a tertiary university hospital. All patients were above 18 years old and could have initiated and/or ended the treatment at any point in the above-mentioned timeframe. Patients whose OAB could have a potential identifiable cause were excluded: neurologic conditions, metabolic conditions (e.g. diabetes mellitus type I or type 2 insulin-treated) or other related pathologic conditions. Data were extracted from electronic health records.

Demographic and clinical data obtained were age, gynecologic and urologic previous history (recurrent UTI, OAB wet *versus* OAB dry, presence of mixed urinary incontinence (MUI), previous midurethral sling (MUS), previous pharmacological treatments, number of intravesical injections performed, treatment benefit according to the patient reports (“greatly improved”, “partially improved, not relevant”, “worsened”, “not changed”), reason to abandon therapy and AE after each procedure. Since treatment response was measured as a dichotomous variable, a positive response was considered only when the patient

mentioned “greatly improvement”, otherwise it was considered negative. Age was also considered a dichotomous variable (<65 vs ≥65 years).

The interval between BTX-A injections was measured from the date of the last injection until the patient asked for the next one.

All the statistical analyses were performed using IBM SPSS Statistics version 25 (IBM Corp., Armonk, NY, USA). To identify baseline variables associated with the effect of the first BTX-A injection (dichotomous outcome) and the occurrence of AE (dichotomous outcome), logistic regression models were fit for each potential predictor. Initially, each baseline variable was modelled individually to assess the association with each of the two outcomes. Subsequently, multivariate backward stepwise regression analysis was performed using all variables from the univariate analysis. For proportional comparisons, a chi-square test was used, unless otherwise stated. Mean and standard deviations (SD) were used for reported parametric continuous variables. A p-value <0.05 was considered significant.

Ethical approval for this study was provided by the Ethical Committee CES of Centro Hospitalar Universitário de São João, Porto, Portugal on July 2019 (Nº 224/19).

Finally, this study was conducted in accordance with the ethical guidelines mandated by the Declaration of Helsinki all ethical questions have been fulfilled, as well as all sources that provided the theoretical support have been properly referenced.

Results

A total of 136 female patients with iOAB refractory or intolerant to oral pharmacological treatment were submitted to an intra-vesical injection of BTX-A. The mean age at first injection was 60.7±15.3 years, minimum 22 and maximum 87 years old. Globally, 268

treatments were performed and the mean number of injections per patient was 1.96 ± 1.32 (1-8).

OAB Wet was present in 121 (89%) women and MUI was found in 99 (72.8%) patients. Nearly one third ($n=33$) of women with MUI had previously done a MUS surgery for stress urinary incontinence (SUI). A total of 28 patients (22.1%) had a history of recurrent UTI before the injection (Table 1).

Concerning the number of treatments, 66 (48.5%) were submitted to a single treatment ($n=66$), 28.7% discontinued at the second treatment ($n=39$) and 11% at the third 3 ($n=15$). The remaining 11.8% of the patients discontinued after 4 or more injections. All patients could ask for a new BTX-A treatment at the time of reappearance or worsening of OAB symptoms.

The mean timeframe between the first and second treatment was 17.5 ± 11.7 months and the interval between the second and the third was 19.6 ± 14.8 months. No significant difference was found between these two intervals ($p=0.4$).

Regarding previous pharmacological therapies, 30.9% ($n=42$) of the patients had tried exclusively an antimuscarinic drug, while 7.4% of them ($n=10$) had tried exclusively the β_3 agonist. Combination therapy with 2 antimuscarinic was tried in 25.7% ($n=35$), while 27.9% ($n=38$) tried the combination of an antimuscarinic with the β_3 agonist.

Likewise, there was no statistically significant difference when analyzing age (<65 or ≥ 65 years old) of women who went for the first injection ($p=0.6$). Additionally, no difference was found regarding incontinence: OAB wet was present in 61 (44.9%) women above 65 years old and 59 (43.4%) bellow 65, although OAB dry was present in more women <65 years old ($p=0.052$). MUI was more common in the elderly group ($p=0.03$) (Table 2).

Efficacy

Concerning the treatment efficacy, 90 out of the 136 patients (66.2%) had great clinical improvement, 41 (30.1%) reported a suboptimal improvement or even worsened their complaints and 5 (3.7%) were not evaluated in any appointment after the procedure, having no clinical records.

Analyzing the 66 patients who were submitted to only one treatment, the reasons given to not repeat the injection were multiple, such as 14 reported lack of improvement, 4 reported worsening of the SUI symptoms, 2 reported worsening of urgency, and 7 referred partial improvement, not relevant enough to repeat. A total of 27 women (40%) decided not to repeat the injection because they considered their symptoms remained controlled after one procedure – either with general measures or pharmacological therapy. Nine women were lost to follow-up, though 4 of them had reported clinical improvement in immediate post-operative evaluation. Three are waiting for a new procedure (Table 3).

Twenty-seven women reported a sustained improvement of the symptoms, without the need to repeat the procedure, and 55 who improved decided to repeat the procedure due to the loss of the effect over time.

Discontinuation of the therapy at the first injection was not dependent on the presence of incontinence at baseline ($p=0.73$) nor it was related to age ($p =0.6$).

On univariate analyses, several parameters, such as age, presence of OAB wet, MUI, number of deliveries, previous hysterectomy and recurrent ITU, were not useful for prediction of clinical outcome after the first BTX-A injection. Although not statistically significant, there was a trend in women who had had a previous MUS surgery for SUI, to have a lower chance of having a positive response in the first injection (OR=0.45 95%;

CI:0.195-1.034; p=0.06). In multivariate analysis, no factor was associated with positive treatment response (Table 4).

Of those 70 women who were submitted to a second injection, 42 (60%) reported to feel clinically better, 25 (35.8%) experienced no symptomatic improvement or had even a symptomatic worsening and 3 (4.3%) were lost to follow-up without a post-injection evaluation. Of the 42 patients with symptomatic improvement, a total of 20 discontinued BTX-A treatment: 18 after a sustained positive clinical response, 1 after the loss of effect over time and one was lost to follow-up. Globally, 31 patients underwent a third injection: 22 women had improved after the second injection, and 9 of them decided to undergo a third treatment although their expectations were not met after the second one.

From patients submitted to a second injection (n=70), 55 had had a positive response in the first treatment. Regarding this 55, thirteen did not respond to the second treatment or the partial improvement did not meet their expectations and 2 worsened. Nevertheless, 38 reported again a clinical improvement. In conclusion, women who had a positive response after the first treatment had 7.5 times more chances to improve after the second (OR=7.46 95% CI 2.038-27.337; p=0.01)

Safety

The total number of AE was 39 (28.7%), all of the grades I and II according to Clavien-Dindo classification. Considering all the injections given, 39 (28.7%) women had at least one adverse event of any kind, 27 (19.9%) presented a UTI after the procedure, 14 (10.3%) had straining to void and 8 (5.9%) required clean intermittent catheterization (CIC) post-operation.

On univariate analyses, considering all the injections given, we tried to identify potential predictors of complications, such as age, presence of OAB wet, previous MUS, and history of recurrent UTI, but no association was found. Addressing post-op UTI, older age (≥ 65 years) was the only predictor associated with less risk (OR=0.38; p=0.039). Further, none of the predictors was associated with the need for CIC. Multivariate analyses revealed that age was an independent predictor of the occurrence of UTI after the procedure (Table 5).

After the first intravesical injection, 29 (21.3%) patients experienced at least one AE. The two most prevalent were UTI (n= 11; 8.1%) and straining to void (n=8; 5.9%), which was present with UTI in 3 more women, 4 women (2.9%) needed clean intermittent catheterization (CIC), and 3 of them had UTI as well.

Of the 70 women who had a second intravesical injection, only 7 (%) had an AE, even though 3 (%) needed CIC. None of these women had previously required it. Of the 31 women who went to the third injection, 4 (12.9%) had an AE.

Discussion

This study was conducted to evaluate the clinical efficacy and safety of BTX-A therapy in the real clinical practice in a tertiary centre, in opposition to a trial-controlled situation.

Some of our results were not in line with data within the literature. In our study, we found that age was not a predictor of treatment response, unlike other authors such as Richter *et. al* that found that the treatment in older women with refractory iOAB had less efficacy compared with younger women (20). Like in our study, Liao *et. al* found no difference in treatment response during the first 12 months post-BTX-A, when comparing younger patients and elderly patients without frailty (21). When analyzing the characteristics of our patients by their age (<65 or >65-year-old, the cut off age used by most scientific papers

in OAB), we identified some significant differences in features like the presence of incontinence or MUI, both more frequent in older patients. Despite these important differences, the results were similar in two groups, which lead us to think of BTX-A more like an inclusive treatment.

Miotla *et. al* showed that the efficacy of BTX-A injection in women who had or had not a previous midurethral sling surgery was comparable (22), while in our study there seems to be a trend to worse clinical outcome in patients with a history of previous sling procedure ($p=0.06$).

As to the interval between injections, we found that it was longer than the usually reported in the literature, 6 to 9 months' interval. Maybe, one of the main causes for delaying a second treatment is the fact that in our department the treatment is performed in the operating room under sedation and, some patients tend to avoid such procedure.

Concerning side effects, in our clinical practice bladder, BTX-A injection is well tolerated, with most of the AE being limited to the urinary tract. AE after the BTX-A injection affects 20-43% of the patients according to the literature (23), which is in line with our results. Our figures might be underrated due to multiple factors: on one hand, AE are usually mild and amenable to treat by a general practitioner and end up not being reported in the clinical diaries. On the other hand, we believe that patients with good health literacy in real clinical practice do not report minor AE that they were aware of and resolve spontaneously (e.g. abdominal straining). The need for clean intermittent catheterization in our patients was in line with other studies (1.3-42.2%), as well as the prevalence of UTI reported (1.3-64%) (24).

In our study, age was not a predictor for any kind of complications, except for UTI. Despite not being consistent with other studies (21, 25), in our study younger patients had a higher rate of UTIs. This might be due to a less active sexual life in older patients. A more

detailed comprehensive study involving sexual activity, and possibly with post-voiding residual (PVR) evaluation, would be interesting. We believe this shows the generalized application of BTX-A injections as a treatment for OAB regardless of patients' age, as already mentioned above. Elderly women can be proposed for this treatment, always with the needed precaution.

In our department, it is recommended a postoperative evaluation after 2 weeks to rule out elevated bladder residual volumes. We assume that the cases with the highest PVR, probably higher than 150-200cc, correspond to the 8 patients who needed to perform CIC – a rate below the incidence reported in other studies. The women who needed this procedure after the second and third procedures didn't need it before.

Our results show that most patients who underwent a second procedure, 55 out of 70, did it because they had a positive response to the first treatment. We also found that age has no influence on requesting to repeat the treatment. In some patients, with a negative response in the first treatment, a second treatment was offered since technical issues could have been the cause of the failure. Patients who responded positively to the first treatment were more prone to respond favourably to a second one ($p=0.01$). This could lead us to suspect that a favourable clinical response to the first treatment can be used as a good predictor of a successful response to a second treatment.

One limitation of our study was its retrospective nature and the different type of clinical registers between urologists diaries, namely the absence of a questionnaire/score or bladder diary in the pre-injection attendance, making it harder to objectively quantify the patient improvement which makes it likely to have an interviewer bias (19). On the other hand, iOAB syndrome treatment results might be very subjective and highly individual,

influenced by the patient lifestyle and treatment expectations(19). The patients' perception of the treatment result more important than incontinence scores to decide whether or not advance to another treatment.

Since it is not mandatory to have a pre-treatment urodynamic study in every patient with OAB, only a few numbers of patients made the study or had the result registered in clinical diaries, preventing the evaluation of the treatment effect on urodynamic parameters.

Due to its inherent characteristics, this was an exploratory study more than a confirmatory one. Although we could not identify any clinical predictor of positive response to the first BTX-A injection, we can considerer that the response to the first injection can be itself a predictive factor to the response to the second treatment.

Conclusion

We conclude that in the real clinical practice BTX-A intravesical injection (either a unique or repeated treatment) is an effective and safe treatment. Moreover, the response to the first injection indicates a predictor of good clinical outcomes in a second treatment.

Acknowledgements

Assistance with the study: none

Financial support and sponsorship: none

Conflicts of interest: none

References

1. Irwin DE, Kopp ZS, Agatep B, Milsom I, Abrams P. Worldwide prevalence estimates of lower urinary tract symptoms, overactive bladder, urinary incontinence and bladder outlet obstruction. *BJU Int.* 2011;108(7):1132-8.
2. Lozano-Ortega G, Walker D, Rogula B, Deighton A, Johnston K, Hawkins N, et al. The Relative Efficacy and Safety of Mirabegron and OnabotulinumtoxinA in Patients With Overactive Bladder who Have Previously Been Managed With an Antimuscarinic: A Network Meta-analysis. *Urology.* 2019;127:1-8.
3. Giannantoni A, Proietti S, Costantini E, Gubbiotti M, Rossi De Vermandois J, Porena M. OnabotulinumtoxinA intravesical treatment in patients affected by overactive bladder syndrome: best practice in real-life management. *Urologia.* 2015;82(3):179-83.
4. Abrams P, Cardozo L, Fall M, Griffiths D, Rosier P, Ulmsten U, et al. The standardisation of terminology in lower urinary tract function: report from the standardisation sub-committee of the International Continence Society. *Urology.* 2003;61(1):37-49.
5. Rovner E, Kennelly M, Schulte-Baukloh H, Zhou J, Haag-Molkenteller C, Dasgupta P. Urodynamic results and clinical outcomes with intradetrusor injections of onabotulinumtoxinA in a randomized, placebo-controlled dose-finding study in idiopathic overactive bladder. *Neurourology and Urodynamics.* 2011;30(4):556-62.
6. Lightner DJ, Gomelsky A, Souter L, Vasavada SP. Diagnosis and Treatment of Overactive Bladder (Non-Neurogenic) in Adults: AUA/SUFU Guideline Amendment 2019. *The Journal of urology.* 2019;202(3):558-63.
7. Marcelissen T, Cornu JN, Antunes-Lopes T, Geavlete B, Delongchamps NB, Rashid T, et al. Management of Idiopathic Overactive Bladder Syndrome: What Is the Optimal Strategy After Failure of Conservative Treatment? *Eur Urol Focus.* 2018;4(5):760-7.
8. Tincello DG, Kenyon S, Abrams KR, Mayne C, Toozs-Hobson P, Taylor D, et al. Botulinum Toxin A Versus Placebo for Refractory Detrusor Overactivity in Women: A Randomised Blinded Placebo-Controlled Trial of 240 Women (the RELAX Study). *European Urology.* 2012;62(3):507-14.
9. Chapple C, Sievert K-D, MacDiarmid S, Khullar V, Radziszewski P, Nardo C, et al. OnabotulinumtoxinA 100 U Significantly Improves All Idiopathic Overactive Bladder Symptoms and Quality of Life in Patients with Overactive Bladder and Urinary Incontinence: A Randomised, Double-Blind, Placebo-Controlled Trial. *European Urology.* 2013;64(2):249-56.
10. Dmochowski R, Chapple C, Nitti VW, Chancellor M, Everaert K, Thompson C, et al. Efficacy and safety of onabotulinumtoxinA for idiopathic overactive bladder: a double-blind,

- placebo controlled, randomized, dose ranging trial. *The Journal of urology*. 2010;184(6):2416-22.
11. Nitti VW, Dmochowski R, Herschorn S, Sand P, Thompson C, Nardo C, et al. OnabotulinumtoxinA for the Treatment of Patients with Overactive Bladder and Urinary Incontinence: Results of a Phase 3, Randomized, Placebo Controlled Trial. *Journal of Urology*. 2017;197(2S):S216-S23.
 12. da Silva CM, Chancellor MB, Smith CP, Cruz F. Use of botulinum toxin for genitourinary conditions: What is the evidence? *Toxicon* 2015;107(Pt A):141-7.
 13. Gralen K, Elmer C, Brostrom E, Althin R, Malmberg L. Clinical practice of BOTOX((R)) treatment for overactive bladder syndrome in Sweden: an assessment of resource use and external validity. *Scandinavian journal of urology*. 2017;51(5):397-401.
 14. Gormley EA, Lightner DJ, Burgio KL, Chai TC, Clemens JQ, Culkin DJ, et al. Diagnosis and Treatment of Overactive Bladder (Non-Neurogenic) in Adults: AUA/SUFU Guideline. *Journal of Urology*. 2012;188(6S):2455-63.
 15. Hsiao SM, Lin HH, Kuo HC. Factors Associated with Therapeutic Efficacy of Intravesical OnabotulinumtoxinA Injection for Overactive Bladder Syndrome. *PloS one*. 2016;11(1):e0147137.
 16. da Silva CM, Cruz F. Has botulinum toxin therapy come of age: what do we know, what do we need to know, and should we use it? *Current opinion in urology*. 2009;19(4):347-52.
 17. Marcelissen TAT, Rahnama'i MS, Snijkers A, Schurch B, De Vries P. Long-term follow-up of intravesical botulinum toxin-A injections in women with idiopathic overactive bladder symptoms. *World Journal of Urology*. 2017;35(2):307-11.
 18. Santos-Silva A, da Silva CM, Cruz F. Botulinum toxin treatment for bladder dysfunction. *International journal of urology : official journal of the Japanese Urological Association*. 2013;20(10):956-62.
 19. Przydacz M, Golabek T, Chlosta P. How to assess and predict success or failure of intradetrusor injections with onabotulinumtoxinA. *Advances in clinical and experimental medicine : official organ Wroclaw Medical University*. 2019;28(4):555-67.
 20. Richter HE, Amundsen CL, Erickson SW, Jelovsek JE, Komesu Y, Chermansky C, et al. Characteristics Associated with Treatment Response and Satisfaction in Women Undergoing OnabotulinumtoxinA and Sacral Neuromodulation for Refractory Urgency Urinary Incontinence. *The Journal of urology*. 2017;198(4):890-6.
 21. Liao C-H, Kuo H-C. Increased Risk of Large Post-Void Residual Urine and Decreased Long-Term Success Rate After Intravesical OnabotulinumtoxinA Injection for Refractory Idiopathic Detrusor Overactivity. *Journal of Urology*. 2013;189(5):1804-10.

22. Miotla P, Futyma K, Cartwright R, Bogusiewicz M, Skorupska K, Markut-Miotla E, et al. Effectiveness of botulinum toxin injection in the treatment of de novo OAB symptoms following midurethral sling surgery. *International urogynecology journal*. 2016;27(3):393-8.
23. Kuo H-C, Liao C-H, Chung S-D. Adverse Events of Intravesical Botulinum Toxin A Injections for Idiopathic Detrusor Overactivity: Risk Factors and Influence on Treatment Outcome. *European Urology*. 2010;58(6):919-26.
24. Mohee A, Khan A, Harris N, Eardley I. Long-term outcome of the use of intravesical botulinum toxin for the treatment of overactive bladder (OAB). *BJU International*. 2013;111(1):106-13.
25. Miotla P, Cartwright R, Skorupska K, Bogusiewicz M, Markut-Miotla E, Futyma K, et al. Urinary retention in female OAB after intravesical Botox injection: who is really at risk? *International Urogynecology Journal*. 2017;28(6):845-50.

Table 1: Demographic characteristics of the patients

Variable	
Age at first injection (years)	60.7±15.3
Parity	2±1.5
Previous hysterectomy	23 (16.9%)
Recurrent urinary tract infection	28 (22.1%)
Overactive Bladder wet	121 (89%)
Mixed urinary incontinence	99 (72.8%)
Previous midurethral sling in Mixed urinary incontinence	33 (24.3%)

Continuous variables are mean±standard deviation; categorical variables are n (%).

Table 2: Characteristics of patients urologic history by age groups

Variable	< 65 years	≥65 years	p* value
Age at first injection	71 52.2%	65 47.8%	0.6
Overactive Bladder dry	12 8.8%	4 2.9%	0.052
Absence of Mixed urinary incontinence	27 19.9%	7 7.4%	0.003
Recurrent Urinary tract infection	17 12.5%	13 9.6%	0.5
Discontinuation after the first injection	33 24.3%	33 24.3%	0.62

Table 3: Breakdown of repeated Onabotulinumtoxin injections and reasons for discontinuation, number of patients

Number of injections	1	2	3	4	5	6	8
Patients	136	70	31	16	6	3	2
Decided not to have further injection	63	39	14	10	3	1	2
Reasons given for no further injection, no							
Symptoms controlled	27	18	9	5	2	1	1
Worsening of stress urinary incontinence	4	0	0	0	0	0	0
Worsening of overactive bladder	2	1	1	0	0	0	0
Lost of effect over time	0	5	3	5	1	0	1
Not significant improvement	7	0	0	0	0	0	0
Lost to follow-up	9	4	0	0	0	0	0
Waiting for a new injection	3	0	1	0	0	0	0

Table 4: Univariate and multivariate analysis of first injection response according to patient demographics

	Outcome after the first injection			
	Univariate analyses		Multivariate analyses	
	OR (95%CI)	p* value	OR(95%CI)	p*value
Age ≥65 years	1.51 (0.721- 3.18)	0.27	-	>0.05
Parity	1.25 (0.912- 1.714)	0.17	-	>0.05
Previous Hysterectomy	0.7 (0.264- 1.838)	0.46	-	>0.05
Recurrent UTI	0.87 (0.371- 2.112)	0.78	-	>0.05
Presence of MUI	0.9 (0.394- 2.065)	0.8	-	>0.05
Previous MUS in MUI	0.45 (0- 195- 1.034)	0.06	-	>0.05
OAB Wet	1.1 (0.354- 3.486)	0.86	-	>0.05

OR= Odds Ratio; CI= Confidence Interval; OAB= Overactive Bladder; MUI= Mixed urinary incontinence; UTI= Urinary tract infection; MUS= Midurethral Sling

Table 5: Univariate and multivariate analyses of all adverse events and separately according to patient demographics

	AEs		UTI		Straining to void		CIC	
	OR (95%CI)	p* value	OR (95%CI)	p* value	OR (95%CI)	P* value	OR (95%CI)	P* value
Univariate analyses								
Age ≥65 years	0.5(0.23-1.08)	0.08	0.38(0.15-9.5)	0.039	0.57(0.18-1.81)	0.34	0.14(0.02-1.19)	0.07
Recurrent UTI	0.62(0.26-1.46)	0.27	0.6(0.23-1.55)	0.29	0.68(0.19-2.33)	0.54	0.25(0.06-1.1)	0.065
Previous MUS	1.1(0.46-2.63)	0.84	0.89(0.34-2.35)	0.82	1.1(0.31-4.57)	0.79	0.51(0.1-2.26)	0.38
OAB Wet	2.1(0.73-6.22)	0.16	1.4(0.41-4.76)	0.58	3.67(1.0-13.5)	0.05	1.1(0.12-9.36)	0.95
Multivariate analyses								
Age ≥65 years	-	>0.05	0.39(0.15-0.98)	0.04	-	>0.05	-	>0.05
Recurrent UTI	-	>0.05	-	>0.05	-	>0.05	-	>0.05
Previous MUS	-	>0.05	-	>0.05	-	>0.05	-	>0.05
OAB Wet	-	>0.05	-	>0.05	-	>0.05	-	>0.05

AE= Adverse Events UTI= Urinary tract infection; CIC= Clean intermittent catheterization; OR= Odds Ratio; CI= Confidence Interval; OAB= Overactive Bladder; MUS= Midurethral Sling

Anexos

- 1) Normas para a submissão de artigos segundo a revista Porto Biomedical Journal;
- 2) Autorização pela Comissão de Ética para Saúde do CHUSJ para a realização da investigação e da reutilização dos registos clínicos para investigação e desenvolvimento

Porto Biomedical Journal

Instructions for Authors

Note: These instructions comply with those formulated by the International Committee of Medical Journal Editors (ICMJE). For further details, authors should consult the following article: International Committee of Medical Journal Editors. "Uniform Requirements for Manuscripts Submitted to Biomedical Journals" *New Engl J Med* 1997, **336**:309–315. The complete document appears at <http://www.icmje.org>. Manuscripts that do not comply with these Instructions cannot be considered for publication and will be sent back to the authors.

The Editorial Office is pleased to answer any questions you may have about preparing your manuscript in accordance with our guidelines.

Email: andremoreira@med.up.pt

SCOPE

Porto Biomedical Journal (PBJ) is an online free-to-submit and open-access journal devoted to the publication of top quality original research conducted in the biomedical fields, especially within the clinical and basic medical settings. The project aims to provide a valuable collection of generalist biomedical literature freely accessible to the international community, in order to become a reference in the current scientific landscape.

In addition, to ensure the quality and scientific relevance of PBJ, the journal counts with a diversified and international editorial board, and only accepts original research and review articles that undergo a strict revision process in a double-blind refereeing system, a procedure that safeguards the fairness of the article selection process.

As a generalist journal, PBJ accepts both original works and reviews in all biomedical areas, be they basic or clinical research. If you believe in a free and open scientific community and want to take your work one step further and closer to your peers, please consider submitting your work to *Porto Biomedical Journal*, the place "where Science meets Knowledge".

JOURNAL POLICIES

Originality

The Editors require that each manuscript is an original contribution and that it has not been, and will not be, submitted elsewhere while it is under consideration for publication in *Porto Biomedical Journal*. Editors may subject any manuscript submitted for consideration of publication in *Porto Biomedical Journal* to plagiarism-detection software. Manuscripts dealing with material that has appeared or is in press, in brief or preliminary form in other publications will not be considered unless the prior publication is a meeting abstract reporting only summarized information and does not exceed one printed page. The ICMJE has provided details of what is and what is not [duplicate or redundant publication](#). If you are in doubt (particularly in the case of material that you have posted on a web site), we ask you to proceed with your submission but to include a copy of the relevant previously published work or work under consideration by other journals. Authors must draw attention to any published work that concerns the same patients or subjects as the present paper in a covering letter with their article.

Authorship

The Journal expects that each person listed as an author has participated sufficiently in the intellectual content, the analysis of data, and/or the writing of the manuscript to take public responsibility for it. Each author must have reviewed the manuscript, believes it represents valid work, and approves it for submission. Moreover, should the Editors request the data upon which the manuscript is based, the authors shall produce it. We ask all authors to confirm that they have met the criteria for [authorship](#) as established by the ICMJE, believe that the paper represents honest work, and are able to verify the validity of the results reported.

All persons designated as authors should qualify for authorship and all those who qualify should be listed. Each author should have participated sufficiently in the work to take public

responsibility for appropriate portions of the content. One or more authors should take responsibility for the integrity of the work as a whole, from inception to published article. Authorship credit should be based only on 1) substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; 3) final approval of the version to be published. Conditions 1, 2 and 3 must all be met. Acquisition of funding, the collection of data or general supervision of the research group, by themselves, do not justify authorship. All others who contributed to the work who are not authors should be named in the Acknowledgements section.

Any change in authorship/contributions after submission must be approved in writing by all authors and submitted to the Editorial Office for final consideration.

English Language Assistance

Authors who are not native speakers of English who submit manuscripts to international journals often receive negative comments from referees or editors about the English-language usage in their manuscripts, and these problems can contribute to a decision to reject a paper. To help reduce the possibility of such problems, we encourage such authors to consider using Wolters Kluwer Author Services*.

Wolters Kluwer Author Services

Wolters Kluwer, in partnership with Editage, offers a unique range of editorial services to help you prepare a submission-ready manuscript:

- **Premium Editing:** Intensive language and structural editing of academic papers to increase chances of journal acceptance.
- **Advanced Editing:** A complete language, grammar, and terminology check to give you a publication-ready manuscript.
- **Translation with Editing:** Write your paper in your native language and Wolters Kluwer Author Services will translate it into English, as well as edit it to ensure that it meets international publication standards.
- **Plagiarism Check:** Helps ensure that your manuscript contains no instances of unintentional plagiarism.
- **Artwork Preparation:** Save precious time and effort by ensuring that your artwork is viewed favorably by the journal without you having to incur the additional cost of purchasing special graphics software.

For more information regarding Wolters Kluwer Author Services, please visit

<http://wkauthorservices.editage.com>.

*Note that the use of such a service is at the author's own expense and risk, and does not guarantee that the article will be accepted.

Ethics

All articles dealing with original human or animal data must include a statement on ethics approval at the beginning of the Methods section. This paragraph must contain the following information: the name and address of the ethics committee responsible; the protocol number that was attributed by this ethics committee; and the date of approval by the ethics committee.

The paragraph could read, for example:

Ethical approval for this study (Ethical Committee N° NAC 207) was provided by the Ethical Committee NAC of Geneva University Hospitals, Geneva, Switzerland on 12 February 2015.

In addition, for studies or case reports conducted on human participants you must state clearly in the text that you obtained written informed consent from the study participants; please also look at the latest version of the [Declaration of Helsinki](#). Similarly, for experiments involving animals you must state the care of animal and licensing guidelines under which the study was performed and report these in accordance with the ARRIVE (Animals in Research: Reporting In

Vivo Experiments) statement. If ethics clearance was not necessary, or if there was any deviation from these standard ethical requests, please state why it was not required. Please note that the editors may ask you to provide evidence of ethical approval. If you have approval from a National Drug Agency (or similar) please state this and provide details, this can be particularly useful when discussing the use of unlicensed drugs.

Patient's Privacy

The protection of a patient's right to privacy is essential. Please collect and keep copies of patients' consent forms on which patients or other subjects of your experiments clearly grant permission for the publication of photographs or other material that might identify them. If the consent form for your research did not specifically include this, please obtain it or remove the identifying material.

A statement to the effect that such consent had been obtained must be included in the 'Methods' section of your paper. If necessary the Editors may request a copy of any consent forms.

Data Reporting

The European Journal of Anaesthesiology adheres to the guidelines on adequate data reporting that were established by The Enhancing the QUALity and Transparency Of health Research (EQUATOR) network (<http://www.equator-network.org/home/>).

Financial Support and Competing Interests

A financial disclosure questionnaire must be completed by the corresponding author and all co-authors at initial submission. Co-authors will receive a link to complete the questionnaire via email. Please ensure each co-author's email address is properly listed at the 'Add/Edit/Remove Authors' submission step in Editorial Manager, to avoid delays in reaching co-authors.

The primary purpose of the disclosure section is to determine whether authors have received any commercial financial support that could create a conflict of interest. In addition to monetary interests, a potential for conflict of interest can exist whether or not an individual believes that a relationship (such as dual commitments, competing interests, or competing loyalties) affects his or her scientific judgment. Please review ICMJE Uniform Requirements for Manuscripts Submitted to Biomedical Journals at the following link: <http://www.icmje.org/conflicts-of-interest>.

In addition to completing the financial disclosure questionnaire authors must clearly state all relevant conflicts of interest in the Acknowledgements section of the submitted manuscript.

Retractions

Porto Biomedical Journal is a member of the Committee on Publication Ethics (COPE), and also refers to the ICMJE advice on [Scientific Misconduct, Expressions of Concern, and Retraction](#) as well as on [Overlapping Publications](#).

Article Types

Original articles

These should describe fully, but as concisely as feasible, the results of original clinical, laboratory or biomedical research. *Special note regarding case studies:* Case studies will be considered for publication only in the Letters to the Editor section of the Journal. The average Original Article fills 7 pages in the printed journal, although manuscripts that exceed this may be occasionally accepted for publication at the Editors' discretion. In general, an Original Article should not exceed 3500 words, not including the abstract, figure legends, and references. Abstracts should be 250 words or less. If possible, each figure legend should be held to 60 words or less. Each Original Article may be accompanied by no more than 8 graphic presentations (tables and/or figures)-for example, 3 tables + 5 figures. (Additional text, tables, or figures can be designated as "supplemental" material, which will be included in the PBJS Online Repository. Please note: Original Article manuscripts that are determined to significantly exceed these limits, or that do not include all of the elements listed below, may be returned to the authors for revision prior to review.

Letters to the Editor

Letters to the Editor are brief reports of clinical or laboratory observations, substantiated by controlled data but limited in scope, and without sufficient depth of investigation to qualify as Original Articles. These may include a brief description of a particular condition that provides insights into diagnosis and clinical management or images that impart important clinical information. Like Original Articles, these manuscripts are subject to peer review. A Letter to the Editor must:

- 1) Be brief. The average Letter to the Editor fills 2 pages in the printed journal, although manuscripts that exceed this may be occasionally accepted for publication at the Editors' discretion. In general, a Letter to the Editor should not exceed 1000 words, not including the figure legend(s) and references. If possible, the figure legend(s) should be held to 60 words or less. Please note: Letter to the Editor manuscripts that are determined to significantly exceed these limits may be returned to the authors for shortening prior to review.
- 2) Have a short, relevant title. Please see the suggestions that appear above (under "A. Original Articles").
- 3) Have a complete title page (see section A1).
- 4) Be accompanied by a short summary that encapsulates the report's findings for a clinically oriented audience (see above).
- 5) Begin with the salutation "To the Editor:"
- 6) Close with the author's name(s), academic degree(s), institutions(s), and location(s).
- 7) Have no more than nine references.
- 8) List the references as complete bibliographic citations following the closure of the letter (see section above for formatting).
- 9) Present lists of Key words, as relevant (see sections above).
- 10) Be limited to a total of 2 figures and/or tables. (Additional figures or tables may be placed in the article's Online Repository; please see the relevant section below.)

Correspondence and replies

Correspondence concerning recent publications in the Journal will be considered for publication and accepted based on their pertinence, their scientific quality, and available space in the Journal. If the correspondence is considered acceptable, a response will be requested from the authors of the referenced PBJ article. Upon review and approval by the Editor, the Correspondence and relevant Reply will both be published together. Both Correspondence and Reply manuscripts must:

- 1) Be no longer than 500 words.
- 2) Have a short, relevant title, distinct from the title of the referenced article. Please note that all Replies should have the title "Reply to [Corresponding author's name]."
- 3) Have a complete title page (see section above).
- 4) List the references as complete bibliographic citations at the end of the letter with the journal article being discussed as the first reference (see section above). The total number of references should be no more than seven. Replies should include the Correspondence to which they are replying as one of the references.
- 5) Have no more than one graphic presentation (table or figure). (See the section on Graphic Presentations below).
- 6) Begin with the salutation "To the Editor:" and close with the author's name(s), academic degree(s), institutions(s), and location(s).

Review articles

Definitive, in-depth, state-of-the-art reviews of clinical and research subjects. Unsolicited reviews are not generally published in PBJ. Before submitting any unsolicited reviews, please

forward an outline to the Editor for consideration.

Systematic reviews and meta-analyses should follow the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (see <http://www.prisma-statement.org/>). A PRISMA flow diagram (<http://www.prisma-statement.org/documents/PRISMA%202009%20flow%20diagram.pdf>) should be used to describe the steps of the systematic review, and a complete PRISMA checklist (<http://www.prisma-statement.org/documents/PRISMA%202009%20checklist.pdf>) should be provided during submission.

Clinical Guidelines

Official recommendations from professional organizations on issues related to clinical practice and health care delivery. PBJ is most interested in publishing the primary guideline documents but will also consider synopses of guidelines when the primary document is published elsewhere. Synopses should focus on those issues of most relevance to generalist clinicians. Manuscripts must:

- 1) Have an equal or less than 275 words, structured abstract (use the following subheadings: Description, Methods and Recommendations)
- 2) Include the name of the responsible organization in the title and identify the article as a clinical guideline.
- 3) Primary Guideline Reports: PBJ is flexible with length, reference, and other format requirements given the variability in the format of guidelines developed by different organizations. However, if guidelines are lengthy (more than 4000 words), we may require the production of an executive summary document with the full document published as a digital-only appendix. A concise table or concise graphic summarizing the recommendations and other key points is desirable.

Guideline Synopses

Text of synopses include the following sections and subheads:

Rationale, Guideline Focus, Target Population, Guideline Development Process, Evidence Review and Grading, Comments and Modification, Clinical Recommendations, Research Recommendations, Applicability and Implementation Issues, and Summary. Guideline Group members followed by key references should be listed at the end.

Rostrum articles

Opinion articles about subjects of particular interest and/or debate may be accepted for peer review after preliminary review by the Editor. Proposals for rostrum articles may be emailed to the Editorial Office; they will be evaluated based on level of interest, novelty, and the current needs of the Journal.

MANUSCRIPT PREPARATION AND FORMATTING INSTRUCTIONS

Manuscripts must be written in clear, grammatical English (see [English Language Assistance](#) above). Manuscripts not conforming to Journal format will be returned to authors for modification. Please double space the entire main body document and number each page. Do not add line numbers as the system will generate those when the PDF is built.

Title page, footnotes, abbreviations, and abstract pages must be included in the main body file. Please do not upload separate copies of these documents.

Acceptable document file types for text and tables include .DOC and .DOCX; do not submit a PDF.

Page 1:

Title Page. The following elements are required for every submission:

Title. Include a descriptive title of the work; the title should not be a sentence. No proprietary or brand names for drugs or agents may be used in article titles. Please, include the study design in the title; for instance, "randomised controlled trial", or "systematic review". Titles should be as informative and complete as possible.

Authors. The full first name, middle initials, and family name of each author, as well as the name(s) of the department(s) and institution(s) to which the work should be attributed.

Address for Correspondence. A current email and full mailing address for the corresponding author must be provided.

Page 2:

Abstract. Original articles should include a structured abstract of no more than 300 words using the following headings: Background; Methods; Results; and Conclusions. They should briefly describe, respectively, the problem being addressed in the study, how the study was performed, the salient results, and what the authors conclude from the results. Conventional non-systematic, reviews should include an unstructured abstract of no more than 250 words.

Main Body: Introduction. The introduction contains a statement of the purpose of the work, the problem that stimulated it, and a brief summary of relevant published investigations.

Methods. Avoid detailed description of previously published methods and cite the appropriate reference. Include appropriate ethical and statistical information.

Results. The results should be concise, avoiding redundant tables and figures illustrating the same data.

Discussion. This section should follow the results and is used to interpret results, with minimal recapitulation of findings.

Acknowledgments: The acknowledgements section should be headed 'Acknowledgements relating to this article' and contain the following distinct statements in separate paragraphs:

- Assistance with the study. Acknowledgements should be made only to those who have made a substantial contribution to the study. Authors are responsible for obtaining written permission from people acknowledged by name in case readers infer their endorsement of data and conclusions. If there was no assistance state: 'Assistance with the study: none.'
- Financial support and sponsorship. You must make reference to all relevant sources of funding concerning this article. If there were no sources of funding please state: 'Financial support and sponsorship: none.'
- Conflicts of interest. You must make reference to all relevant conflicts of interest concerning this article including financial, consultant, institutional and other relationships that might lead to bias or a conflict of interest. If there are no conflicts of interest please state: 'Conflicts of interest: none.'
- Presentation (for original articles only). Presentations of preliminary data at, for example, international meetings should be acknowledged separately. If preliminary data was not previously presented please state: Presentation: none.

References: Use the Vancouver reference system as adopted by the U.S. National Library of Medicine ensuring that all journal titles conform to Index Medicus approved abbreviations. Number references consecutively in the order in which they are first mentioned in the text. Identify references in the text, tables and legends using superscripted Arabic numerals that are placed after the punctuation. References cited only in tables or in legends to figures should be numbered in accordance with the sequence established by the first identification in the text of the particular table or illustration.

Avoid citing abstracts unless from a MEDLINE or EMBASE indexed journal. Unpublished observations and personal communications should not be used as references, although references to written (not verbal) communications may be inserted (in parentheses) in the text. Manuscripts that have been accepted but not yet published (e.g. Epub ahead of print) should be included in the list, followed by (in press). Information from manuscripts not yet accepted may be cited only in the text as (unpublished observations). Authors should verify references against the original documents before submitting the article.

Electronic or online references should be cited in the reference list only if the material referenced is a specific article (e.g. a paper published in a web-based journal); see below for correct style. Less specific references (e.g. the web pages of societies, organisations and university departments) should not appear in the references; instead the URL should be cited in full in the text.

Authors must confirm that the details of these references are accurate and complete. In the full list of references give the names and initials of all authors. If there are more than six, cite only the first three names followed by et al. The authors' names are followed by the title of the article: the title of the journal (*italics*) abbreviated according to the style of Index Medicus: the year of publication: the volume number (in bold): the first and last page numbers in full followed by a full stop. Titles of books should be followed by the town and country of publication, the publisher, the year and inclusive page numbers. See the following examples:

Journal articles:

Pollard BJ, Bryan A, Bennett D et al. Recovery after oral surgery with halothane, enflurane, isoflurane or propofol anaesthesia. *Br J Anaesth* 1994; 72:559–566.

Books:

Korttila K. Recovery period and discharge. In: White P, ed. *Outpatient Anaesthesia*. New York, USA: Churchill Livingstone Inc, 1990: 369–395.

Chapter in a book:

Pessayre D, Feldmann G, Haouzi D, Fau D, Moreau A, Neumann M. Hepatocyte apoptosis triggered by natural substances (cytokines, other endogenous molecules and foreign toxins). In Cameron RG, Feuer G (editors): *Apoptosis and its Modulation by Drugs*. Handbook of Experimental Pharmacology. Berlin: Springer-Verlag; 2000, pp. 59-108.

Electronic articles:

Margolis PA, Stevens R, Bordley WC, Stuart J. From concept to application: the impact of a community-wide intervention to improve the delivery of preventive services to children. *Pediatrics* [online serial] 2001; 108:e42.

<http://www.pediatrics.org/cgi/content/full/108/3/e42>. [Accessed 20 September 2001].

Tables: References to tables should be made in order of appearance in the text and should be in Arabic numerals in parentheses, e.g. (Table 1). Each table should be typed on a separate sheet in 1.5 spacing. Tables should not be submitted as photographs. Each table should have a brief title as a heading. Vertical rules should not be used. Place explanatory matter in footnotes, not in the heading. Authors are discouraged from using abbreviations in tables. If abbreviations are necessary then please explain them in the table's footnotes. Be sure that each table is cited in the text. If you use data from another published or unpublished source, obtain permission and acknowledge the source fully.

Authors are encouraged to submit non-essential tables as supplemental digital content for publication online only. See Supplemental Digital Content section for more details.

Figures and Legends: Figures should be uploaded in the highest resolution available. Legends should be supplied for all figures. They are numbered to correspond with the figures and typed double-spaced on a separate page. Figure legends for any supplemental figures being submitted are to be provided separately; see section, Supplemental Digital Content (SDC).

Acceptable figure file formats

- Do not embed figures into the main body file
- All final digital figures for accepted manuscripts must be submitted in EPS, TIFF, JPG. PowerPoint PPT format is permitted when the image resolution is very high.
- Each figure must be uploaded as a separate file.

- Diagrams, drawings, graphs and other line art should be prepared at a resolution of 1200 DPI.
- Halftones images (black/white or color) should be prepared at a resolution of 300 DPI.
- Combination halftones (images containing both pictures and text labeling) should be prepared at 600 DPI.
- Your manuscript may be returned to you for correction if the images are of insufficient quality.
- If photographs of people are used, their identities must be obscured or their written consent to use the photograph must have been obtained. If necessary the Editors may request copies of any consent forms.
- If a figure has been published before, the original source must be acknowledged and written permission from the copyright holder for both print and electronic formats should be submitted with the material. Permission is required regardless of authorship or publisher, except for documents in the public domain.
- Figures may be reduced, cropped or deleted at the discretion of the editor.

Artwork submitted to the Journal will be checked for quality. Authors submitting a revised paper will have the opportunity to check the quality of their images and make the necessary changes. This step is required for all revisions.

Supplemental Digital Content (SDC): Authors may submit Supplemental Digital Content to supplement the information provided in the manuscript. It is preferable to include all significant figures and tables in the manuscript, since there is not a limit on the number of items in this online journal. Nonetheless, SDC may include the following types of content: text, tables, figures, references peripheral to information provided as SDC, audio, and video. SDC should be consecutively cited in the Main Body text of the submitted manuscript. SDC files will be available via URL(s) placed at the citation points within the article and are not copyedited by the publisher. Note that Journal policies for manuscript submission relating to peer review, patient anonymity, ethics, financial disclosure, copyright, and permissions also apply to SDC. Authors should mask patients' eyes and remove patients' names from supplemental digital content unless they obtain written consent from the patients and submit them as supplemental files at the time of the manuscript submission. See also Case Study Reports, above.

Format, File Type and Size Requirements: SDC must be provided in one Word or PowerPoint file. Each SDC in the file should have a visual header in the following name format (e.g., "SDC, Figure 1"; "SDC, Materials and Methods") and a corresponding citation must appear in the Main Body text. Note that SDC is numbered separately from non-SDC material. If providing SDC figure(s), a figure legend should be included on the figure itself. When uploading SDC select "Supplemental Digital Content" as the file designation. For audio and video files, also include the author name, videographer, participants, length (minutes), and size (MB). Video files should be formatted with a 320x240 pixel minimum screen size. For each submission, the SDC file cannot exceed a total size of 10 MB.

ONLINE MANUSCRIPT SUBMISSION

New Submissions

Once the manuscript has been created, visit the submission site at www.editorialmanager.com/pbj to upload the manuscript. Once the manuscript has been vetted for compliance to the Journal's requirements, a manuscript number will be assigned to the submission. Failure to adhere to these guidelines will result in your manuscript being returned to you for correction. Faxed, scanned or emailed copies of manuscripts will not be accepted.

Mandatory License to Publish Forms

Upon first revision, authors will be required to complete a License to Publish (LTP) form. Authors can also provide these at the original submission stage. LTP forms may be signed by the Corresponding Author on behalf of all authors. Authors retain copyright for all articles. Authors grant the journal a license to publish the article and identify itself as the original

publisher. Manuscripts will not pass to production without completed forms. LTP forms are available from the submission site homepage www.editorialmanager.com/pbj.

Article Processing Charges

This is an open access journal: all articles will be immediately and permanently free for everyone to read and download. *Porto Biomedical Journal* does not charge authors for Open Access publishing.

Creative Commons license

Open access articles will be freely available to read, download and share from the time of publication. Articles are published under the terms of the Creative Commons License Attribution-NonCommercial No Derivative 4.0 which allows readers to disseminate and reuse the article, as well as share and reuse of the scientific material. It does not permit commercial exploitation or the creation of derivative works without specific permission. To view a copy of this license visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

Compliance with NIH and other research funding agency accessibility requirements

A number of research funding agencies now require or request authors to submit the post-print (the article after peer review and acceptance but not the final published article) to a repository that is accessible online by all without charge. As a service to our authors, Wolters Kluwer identifies to the National Library of Medicine (NLM) articles that require deposit and transmits the post-print of an article based on research funded in whole or in part by the National Institutes of Health, Howard Hughes Medical Institute, or other funding agencies to PubMed Central. The License to Publish provides the mechanism. Wolters Kluwer ensures that authors can fully comply with the public access requirements of major funding bodies worldwide.

Authors funded by RCUK, Wellcome Trust, Austrian Science Fund (FWF), or World Health Organization (WHO) must sign a license giving the publisher the right to publish the article. The authors retain copyright but anyone may reuse the article and create derivatives, even for commercial purposes, with proper attribution to *Porto Biomedical Journal* as the original publisher. Authors will be required to publish, as per the RCUK mandate and the Wellcome Trust, FWF, and WHO policies, under the Creative Commons: Attribution (CC-BY) License.

Copyright © 2019 Wolters Kluwer Health, Inc. All rights reserved.

[Copyright/Disclaimer Notice](#) • [Privacy Policy](#)

Tomei conhecimento. Nada a opor. À DC.

29 de Julho de 2019

A Coordenadora da Unidade de Investigação

(Prof.ª Doutora Ana Azevedo)



SÃO JOÃO

PEDIDO DE AUTORIZAÇÃO

Realização de Investigação

n.º 224/19

DIRECÇÃO CLÍNICA

11/8/2019

Centro Hospitalar São João
Ao CA
com parecer

[Signature]

Centro Hosp. Univ. São João
Maria João Baptista
Diretora Clínica

Exmo. Senhor Presidente do Conselho de Administração
do Centro Hospitalar de São João

AUTORIZADO

Nome do Investigador Principal:

Pedro Filipe Pinto de Abreu Mendes

Título da Investigação:

Evaluating the effect of intravesical botulinum neurotoxin-A injection in women with idiopathic overactive bladder

Pretendendo realizar no(s) Serviço(s) de:

Serviço de Urologia do CHUSJ

a investigação em epígrafe, solicito a V. Exa., na qualidade de Investigador/Promotor, autorização para a sua efetivação.

Para o efeito, anexo toda a documentação referida no dossier da Comissão de Ética do Centro Hospitalar de São João/Faculdade de Medicina da Universidade do Porto respeitante à investigação, à qual enderecei pedido de apreciação e parecer.

Com os melhores cumprimentos.

O Investigador/Promotor

Porto, 30 de junho de 2019 .

[Signature]
assinatura

Centro Hospitalar São João
Centro de Epidemiologia Hospitalar

24.7.2019

[Signature]

CONSELHO DE ADMINISTRAÇÃO - REUNIÃO DE			
Presidente do Conselho de Administração			
2019-08-01			
(Prof. Doutor Fernando Araújo)			
Diretora Clínica	Enf.ª Coordenadora	Voga Executivo	Voga Executivo
<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
(Prof.ª Doutora Maria João Baptista)	(En.ª Flomera Cardoso)	(Dr. Lu.º Pinz. Gomes)	(Dr. Sérgio Leal)

Parecer da Comissão de Ética para a Saúde do
Centro Hospitalar Universitário de São João / Faculdade de Medicina da Universidade do Porto

Título do Projecto: Evaluating the effect of intravesical botulinum neurotoxin-A injection in women with idiopathic overactive bladder

Nome do Investigador Principal: Dr. Pedro Filipe Pinto de Abreu Mendes, interna de formação específica em Urologia no CHUSJ

Onde decorre o Estudo: No Serviço de Urologia. Falta apresentar declaração da Direcção de Serviço.

Objectivos do Estudo:

Perceber qual a eficácia da terapia intravesical com toxina botulínica, feita no Serviço de Urologia, como 3ª linha de tratamento em mulheres com idades compreendidas entre os 18 e os 90 anos com bexiga hiperactiva idiopática.

Perceber quais as características das pacientes em que a terapêutica com toxina botulínica é bem sucedida ou mal sucedida.

Concepção e Pertinência do estudo:

Identificação de fenótipos que poderão permitir reconhecer as doentes que mais beneficiam da escalada terapêutica para a toxina botulínica.

Identificação de sinais precoces da falência da terapêutica intravesical.

Implementação de medicina personalizada no tratamento da bexiga hiperactiva.

Avaliar se a técnica cirúrgica no Serviço de Urologia é uniforme.

Análise retrospectiva das doentes do sexo feminino, entre 18 e 90 anos, com bexiga hiperactiva idiopática submetidas a injeções de toxina botulínica intravesical no CHUSJ durante um período de 14 anos (Janeiro de 2005 a Janeiro de 2019).

Benefício/risco: Não aplicável

Confidencialidade dos dados: Está garantido a confidencialidade dos dados.

Incluiu um pedido de reutilização de registos clínicos para investigação e desenvolvimento ao RAI.

Respeito pela liberdade e autonomia do sujeito de ensaio: Não aplicável

Curriculum do investigador: Adequado à investigação.

Data previsível da conclusão do estudo: Março de 2020

Conclusão: Proponho um parecer favorável à realização deste projecto de investigação, após resposta à questão em itálico.

Porto, 19 de Julho de 2019

O Relator da CES, Dr. John Preto



*Foi entregue a
declaração da
Discussão de Serviço*

19/07/19

Pedro Brito



Questionário para submissão de Investigação

Exmo. Sr. Presidente da Comissão de Ética do Centro Hospitalar de São João/
Faculdade de Medicina da Universidade do Porto,

Pretendo realizar a investigação infracitada, solicito a V. Exa., na qualidade de Investigador, a sua apreciação e a elaboração do respetivo parecer. Para o efeito, anexo toda a documentação requerida.

IDENTIFICAÇÃO DO ESTUDO

Título da investigação: Evaluating the effect of intravesical botulinum neurotoxin-A injection in women with idiopathic overactive bladder

Nome do investigador: Pedro Filipe Pinto de Abreu Mendes

Endereço eletrónico: pedromendes.uc@gmail.com

Contacto telefónico: 917923110

Caracterização da investigação:

Estudo retrospectivo

Estudo observacional

Estudo prospetivo

Inquérito

Outro. Qual? _____

Tipo de investigação:

Com intervenção

Sem intervenção

Formação do investigador em boas práticas clínicas (GCP): Sim Não

Promotor (se aplicável): _____

Nome do orientador de dissertação/tese (se aplicável): Pedro Filipe Pinto de Abreu Mendes

Endereço eletrónico: pedromendes.uc@gmail.com

Local/locais onde se realiza a investigação: Serviço de Urologia CHUSJ

Data prevista para início: 10 / 07 / 2019

Data prevista para o término: 31 / 03 / 2020

PROTOCOLO DO ESTUDO

Síntese dos objetivos:

- Perceber qual a eficácia da terapia intravesical com a toxina botulínica, feita no serviço de urologia, como 3ª linha de tratamento em mulheres com idades compreendidas entre 18 e 90 anos com bexiga hiperativa idiopática (Overactive Bladder - OAB);
- Perceber quais as características das pacientes em que a terapêutica com toxina botulínica é bem sucedida ou mal sucedida;

Fundamentação ética (ganhos em conhecimento/ inovação; ponderação benefícios/riscos):

- Identificação de fenótipos que poderão permitir reconhecer as doentes que mais beneficiam da escalada terapêutica para a toxina botulínica;
- Identificação de sinais precoces da falência da terapêutica intravesical;
- Implementação de medicina personalizada no tratamento de bexiga hiperativa.
- Avaliar se a técnica cirúrgica no serviço é uniforme

LISTA DE DOCUMENTOS ANEXOS

- Pedido de autorização ao Presidente do Conselho de Administração do Centro Hospitalar de São João (se aplicável)
- Pedido de autorização à Diretora da Faculdade de Medicina da Universidade do Porto (se aplicável)
- Protocolo do estudo
- Declaração do Diretor de Serviço onde decorre o estudo
(sendo um estudo na área de enfermagem deve anexar também a concordância da chefia de enfermagem)
- Profissional de ligação
- Informação dos orientadores
- Informação ao participante
- Modelo de consentimento
- Instrumentos a utilizar (inquéritos, questionários, escalas, p.ex.): _____
- Curriculum Vitae abreviado (máx. 3 páginas)
- Protocolo financeiro
- Outros:

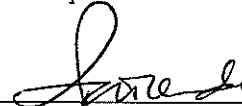
COMPROMISSO DE HONRA E DECLARAÇÃO DE INTERESSES

Declaro por minha honra que as informações prestadas neste questionário são verdadeiras. Mais declaro que, durante o estudo, serão respeitadas as recomendações constantes da Declaração de Helsínquia (1960 e respetivas emendas), e da Organização Mundial da Saúde, Convenção de Oviedo e das "Boas Práticas Clínicas" (GCP/ICH) no que se refere à experimentação que envolve seres humanos. Aceito, também, a recomendação da CES de que o recrutamento para este estudo se fará junto de doentes que não tenham participado em outro estudo, nos últimos três meses. Comprometo-me a entregar à CES o relatório final da investigação, assim que concluído.

Porto, 2 de Julho de 2019

Nome legível:

Felipe Filipe Pinto de Abreu Mendes




assinatura

Parecer da Comissão de Ética do Centro Hospitalar de São João/FMUP

Emitido na reunião plenária da CE de 19 / 07 / 19

A Comissão de Ética para a Saúde ~~FMUP~~
APROVA a realização deste projecto de
investigação na sua actual conformidade.



Prof. Doutor Filipe Almeida
Presidente da Comissão de Ética



Pedido de Reutilização de Registos Clínicos para Investigação e Desenvolvimento (I&D)

Exmo. Senhor
Responsável pelo Acesso à Informação
(Artigo 9º da Lei n.º 26/2016, de 22 de agosto)
Dr. Rui de Vasconcelos Guimarães



AUTORIZADO
RAI - Responsável pelo Acesso à Informação
23.02.19

1. Identificação do(s) Investigador(es) Preenchimento Obrigatório

1.1. Investigador Principal

Nome Pedro Filipe Pinto de Abreu Mendes

Contacto telefónico 9 1 7 9 2 3 1 1 0

Endereço eletrónico pedromendes.uc @ gmail.com

1.2. Investigador(es) Associado(s)

Número Total: 3

Nome Maria Inês Portugal Rodrigues

Contacto telefónico 9 1 3 8 0 1 3 6 1

Endereço eletrónico inesp_rodrigues @ hotmail.com

Nome Luís Manuel Pedrosa do Vale

Contacto telefónico 9 1 9 9 6 9 5 8 7

Endereço eletrónico luismpvale @ gmail.com

Nome Carlos Manuel Pires Martins da Silva

Contacto telefónico 9 6 3 2 7 1 7 6 2

Endereço eletrónico carsil @ med.up.pt

1.3. Afiliação Institucional do Investigador Principal

1.3.1. Grupo Profissional

Médico(a) Enfermeiro(a) Docente Estudante
 Outro. Qual? _____

1.3.2. Documento de identificação pessoal ou profissional

Cartão de Cidadão Bilhete de Identidade Célula Profissional
 Cartão de Docente Cartão de Estudante Outro. Qual? _____

Número de Documento 1 4 1 7 5 9 7 2

2. Enquadramento e Identificação do Trabalho de Investigação e Desenvolvimento Preenchimento Obrigatório

2.1. Enquadramento da investigação

Trabalho académico de investigação e desenvolvimento:
 Não conferidor de grau
 Conferidor de grau: Licenciatura Mestrado Doutoramento
 Projeto de investigação e desenvolvimento

3. Observações Preenchimento Facultativo

4. Aceitação dos Termos e Condições da Reutilização

Cumulativamente com as obrigações decorrentes da lei já citada (n.º 2 e 3 do artigo 21 e o n.º 1 e 2 do artigo 12, ambos da Lei n.º 26/2016, de 22 de agosto) ao submeter o presente pedido concordo e fico ainda vinculado aos seguintes termos e condições:

- Comprometo-me a manter confidencial toda a informação à qual vou ter acesso;
- Não vou elaborar registos, susceptíveis de identificar ou tornar identificável a identidade das pessoas a quem os mesmos dizem respeito;
- Não vou elaborar, nem ficar na posse, de cópias de bases de dados utilizadas na recolha de informação;
- Comprometo-me a obter junto da Comissão Nacional de Proteção de Dados (CNPd) as necessárias autorizações, para eventuais bases de dados que venha a conceber e utilizar no âmbito da presente investigação;
- Comprometo-me a devolver ao Centro Hospitalar de São João, na pessoa do seu Diretor Clínico, as bases de dados e o resultado da investigação;
- Comprometo-me a ocultar os elementos de identificação da(s) pessoa(s) a quem os registos digam respeito, em futuras e eventuais publicações de resultados;
- Comprometo-me a consultar os processos clínicos nas instalações que me forem indicadas para o efeito;
- Comprometo-me a obter os necessários pareceres, quer da Comissão de Ética do Hospital, quer do Centro de Epidemiologia Hospitalar, sempre que necessário;
- Comprometo-me a citar as fontes sempre que publicitar o trabalho de investigação independentemente de requerer a Certidão de Reutilização (DAREuse Certificate for Research - DARE);
- Tomei conhecimento, que a violação de qualquer dos compromissos aqui assumidos, resultará no apuramento de responsabilidades disciplinares, civis e penais e ainda, à impossibilidade futura de aceder a informação de saúde para fins de investigação.

5. Decisão do investigador sobre requerer a DAREuse Certificate for Research - DARE Preenchimento Obrigatório

Pretendo desde já requerer a Certidão de Reutilização (DARE) cujo sentido, valor e significado consultei em <http://portal-chsj.min-saude.pt/pages/710>.

Não pretendo requerer a Certidão de Reutilização (DARE) cujo sentido, valor e significado consultei em <http://portal-chsj.min-saude.pt/pages/710>.

6. Assinatura

Nota 1: Se o presente pedido for submetido eletronicamente ou faz assinatura digital qualificada; ou posteriormente vem ao Centro Hospitalar de São João exibir o seu documento de identificação pessoal, ou no âmbito do seu espaço de liberdade e como manifestação expressa do seu consentimento envia cópia do referido documento, neste caso, concluído o processo ser-lhe-á devolvida ou eliminada a cópia do documento de identificação pessoal, conforme as indicações que dê.

Nota 2: Se o presente pedido for entregue presencialmente, assina e exibe o documento de identificação a quem recebe o pedido.

Data | 2 | 0 | 1 | 9 | - | 0 | 7 | - | 0 | 2 |



Investigador Principal

Em caso de dúvida no preenchimento contacte através dos endereços eletrónicos
rai.reutilizacao.id@chsj.min-saude.pt ou ruiguimaraes@chsj.min-saude.pt
ou pelos números de telemóvel 962 204 194 ou 918 880 299

SUBMETER