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ORIGINAL ARTICLE

Efficacy of botulinum toxin A for the treatment of bladder pain syndrome: A systematic review☆

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Interstitial cystitis

Abstract
Objectives: To determine the efficacy and safety of BTX-A, compared with other interventions for the treatment of BPS to improve quality of life.
Methods: This systematic review fulfills all the requirements of the Cochrane manual and PRISMA reporting guidelines. The PROSPERO registration number is: CRD42016039480. Clinical trials without language discrimination were included. BPS patients over 18 y/o that were treated with BTX-A were included. Studies were searched in published databases and no published literature from inception to the present day. Risk of bias analysis was done using the Cochrane risk of bias tool.
Results: 88 articles were found with the designed search strategies. After exclusions, four studies were included in the qualitative analyses. Kasyan et al. (2012) compared BTX-A with hydrodistention. Manning et al. (2014) compared the injection of BTX-A with the injection of normal saline in previously hydrodistended bladders. In both cases, primary end point was measured by the O'Leary-Sant questionnaire score. El-Bahnasy et al. (2009) compared BTX-A with BCG administration, through Global Response Assessment. Kuo et al. (2015) compared hydrodistention plus suburothelial injections of BTX-A with hydrodistension plus normal saline injections. Reduction in pain was estimated by VAS bladder pain score. A similar efficacy to their controls had been found in Kasyan and Manning studies. El-Bahnasy had found improvement in BTX-A in all parameters. Kuo et al. (2015) found a significantly reduction in pain in the BTX-A group. Regarding the risk of bias, three studies did not have adequate descriptions of selection, performance and detection bias. The study of Manning had low risk of selection, attrition and reporting bias.

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Conclusion: There is not enough evidence to conclude the efficacy of BTX-A for the treatment of interstitial cystitis to improve quality of life.

PALABRAS CLAVE
Síndrome de dolor vesical;
Neurotoxina botulínica;
Toxina botulínica;
Dolor pélvico crónico;
Cistitis intersticial

Eficacia de la toxina botulínica A para el tratamiento del síndrome de dolor vesical: una revisión sistemática

Resumen

Objetivos: Determinar la eficacia y seguridad de la TXB-A en comparación con otras intervenciones para el tratamiento de SDV para mejorar la calidad de vida.

Métodos: Esta revisión sistemática cumple con todos los requisitos del Manual Cochrane y las pautas de PRISMA. El número de registro PROSPERO es: CRD42016039480. Se incluyeron ensayos clínicos sin discriminación idiomática. Los pacientes con SDV mayores de 18 y/o que fueron tratados con TXB-A fueron incluidos. Los estudios se buscaron en bases de datos publicadas y literatura no publicada desde el inicio hasta la actualidad. El análisis de riesgo de sesgo se realizó con la herramienta Cochrane de riesgo de sesgo.

Resultados: Se encontraron 88 artículos con las estrategias de búsqueda diseñadas. Después de las exclusiones se incluyeron 4 estudios en los análisis cualitativos. Kasyan et al. (2012) compararon TXB-A con hidrodistensión. Manning et al. (2014) compararon la inyección de TXB-A con la inyección de solución salina normal en vejigas previamente hidrodistendidas. En ambos casos el principal objetivo se midió mediante la puntuación del cuestionario O'Leary-Sant. El-Bahnasy et al. (2009) compararon la TXB-A con la administración de BCG, a través de la evaluación de respuesta global. Kuo et al. (2015) compararon la hidrodistensión más las inyecciones suburoteliales de TXB-A con hidrodistensión más inyecciones de solución salina normal. La reducción del dolor se estimó mediante la puntuación de dolor vesical EAV. Se había encontrado una eficacia similar a sus controles en los estudios de Kasyan y Manning. El-Bahnasy había encontrado una mejoría en la TXB-A en todos los parámetros. Kuo el al. (2015) encontraron una reducción significativa en el dolor en el grupo TXB-A. En cuanto al riesgo de sesgo 3 estudios no tenían descripciones adecuadas de sesgo de selección, rendimiento y detección. El estudio de Manning tuvo bajo riesgo de sesgo de selección, abandono y notificación.

Conclusión: No hay suficiente evidencia para concluir la eficacia de la TXB-A en el tratamiento de la cistitis intersticial para mejorar la calidad de vida.

Introduction

The definition of BPS, proposed by the Society of Urodynamics Female Pelvic Medicine and Urogenital Reconstruction, is 'an unpleasant sensation of pain, pressure or discomfort perceived to be related to the urinary bladder and associated with lower urinary tract symptoms of more than 6 weeks in duration, while in the absence of infection or other identifiable causes'.[1] BPS produces a deleterious effect on the quality of life and is described as severe as end stage renal disease.[2] It also involves a significant cost to the patient and the health care system.[2] The RAND Interstitial Cystitis Epidemiology study shows that the prevalence for this condition varies between 2.7% and 6.5%.[3] It comprises 9:1 female to male ratio predominance, affecting women more commonly between the ages of 40 and 60.[4]

The botulinum toxine A (BTX-A) injection has its place only after other interventions have failed.[5] It is believed to improve symptoms by delaying or even eliminating the need for more invasive therapy.

The AUA guideline states that the evidence supporting the use of BTX-A for BPS is limited and should be restricted to practitioners with experience and patients who have long-term follow-up after intervention.[2] In contrast, the EAU guideline states that BTX-A with hydrodistention, for BPS, is a grade of recommendation A and without hydrodistention is a grade of recommendation C.[5]

There are several differences among publications related to the injection of BTX-A for BPS. These differences essentially are: the amount of BTX-A used, the injection site, depth of the injection, and number of injections administered. The dosage used in several publications vary from 50 to 500 IU of BTX-A. The number of injections also vary from 10 to 30 puncture sites and without any mention of differences on effectiveness. Most of the injections are administered into the trigone,[6] based on the fact that most nociceptive bladder afferents are concentrated there. In contrast, some other papers have described the injection site on the whole bladder wall or even sparing the trigone.[7]

Seven subtypes of botulinum toxin exist. Types A and B are in urological use, but most studies have been performed with botulinum toxin A type. The BTX-A produces a reversible chemical denervation by the block of not only