Commentary

iMedPub Journals
www.imedpub.com

American Journal of Pharmacology and Pharmacotherapeutics

2021
Vol.8 No.4:e002

Role of Oxybutynin in Urogenital Disorder

Dominik Alexander*

Department of Pharmacology, Claude Bernard University, Lyon, France

***Corresponding author:** Dominik Alexander, Department of Pharmacology, Claude Bernard University, Lyon, France, E-mail: alexandominik@gmail.com

Received date: November 2, 2021; **Accepted date:** November 16, 2021**; Published date:** November 23, 2021

Citation: Alexander D (2021) Role of Oxybutynin in Urogenital Disorder. Am J Pharmacol Pharmacother Vol.8 No.4:e002.

Description

Genitourinary disease is a problem that affects the genitourinary system and the genitals (genitals). Before birth, urinary tract and genital development are closely related. Part of the urinary tract is near the genitals or passes through the genitals. Problems with one tube often affect or relate to the other tube. The

Urinary tract serves to remove waste products and excess water from the body. The urinary tract includes:

• Kidney-A pair of organs that filter and remove waste products and excess water from the blood. The by-product is urine.

• Ureter-A small tube that carries urine from the kidneys to the bladder.

• Bladder-A muscle bag that collects and stores urine. Muscles allow you to control when the bladder is emptied, known as urination (urination).

• Urethra-A small tube that carries urine from the bladder to the outside of the body.

Female reproductive tract includes:

• Vagina

• Prostate

• Uterus

• Ovaries

• Fallopian tube

Male reproductive tract includes:

• Testicals, Penis

• Duct system-(including the epididymis and vas deferens)

• Accessory glands (including the prostate glands and seminal vesicles)

There are many different urogenital disorders. Some disorders are due to the abnormal development of pregnant babies. These are known as birth defects and may be seen by ultrasound before birth. Others are found later in life during a postnatal physical examination or due to other related problems.

Common signs of genitourinary disorder are:

• Frequent Urinary Tract Infections (UTI)

• Pain in the pelvis or inguinal region

• Bladder incontinence-Uncontrolled bladder, leakage, constant urge to urinate

• Pain or discomfort during urination

• In urine blood

• Foul-smelling or strong-smelling urine

• Reduced urine output

• Visually abnormal or malformed genital organs

Role of Oxybutynin

Oxybutynin chloride is anticholinergic and direct smooth muscle relaxation to the bladder It has both effects. It has a local anesthetic effect on overactive bladder. Urodynamic testing shows that oxybutynin increases bladder size, reduces the frequency of symptoms, and delays the initial desire to urinate. The

Ditropan XL has an innovative drug delivery system, the Oral Osmotic Delivery System (OROS). Ditropan XL tablets have a two-layer core with an active ingredient layer and a push layer with an osmotic component. The outer tablet consists of a semipermeable membrane with precisely laser-drilled holes that allow continuous release of the drug. When the drug is ingested, the aqueous environment of the gastrointestinal tract allows water to penetrate the tablet at a constant rate through the semipermeable membrane. When water is introduced inside the tablet, the drug liquefies and the pressure layer osmotically swells. When the pressure layer swells, the drug suspension is pushed out of the hole at a constant rate over a 24-hour period. The Ditropan XL achieves steady-state values over a 24-hour period. To avoid cytochrome P450 enzymes, avoid first-pass metabolism of the liver and upper gastrointestinal tract. It has excellent effects with minimal side effects.

A study showed that oxybutynin chloride reduced incontinence episodes by 8390%. The total incontinence rate is 4150%. The average reduction in urinary frequency was 23%. In clinical trials, only 1% stopped taking Ditropan XL due to dry mouth and less than 1% stopped taking Ditropan XL due to side effects of CNS.

Mechanism of action

Oxybutynin exhibits antispasmodic and antimuscarinic effects on smooth muscle delays emptying, increases bladder capacity, and reduces unrestrained contractions. Reduce frequency and urgency.

Absorption

Bioavailability: 6% (approx. 1.52 times higher with sustained release)

Onset of action: 30-60 minutes

Peak effect: 3-6 hours

Duration: 6-10 hours

Peak plasma time: <1 hour (immediate release); 12 hours (Sustained release).

Peak plasma concentration: Immediate release, 3.6 ng/ml (R) and 7.8 ng/ml (S); Sustained release, 1 ng/ml (R) and 1.8 ng/ml (S).

Distribution

Vd: 193 L

Metabolism

CYP3A4 is metabolized in the liver and intestines. Conversion to the active metabolite N-desethyloxybutynine (DEO) by the GI pathway bypassed during transdermal administration reduces the DEO ratio.

Metabolite: DEO (activity).

Elimination

Half-life: 23 hours (immediate release); 12-13 hours (sustained release).

Excretion: Through Urine.