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day) group, whereas another 8 age-matched rats formed the control group. Erectile function was evaluated by measuring intracavernosal pressure (ICP) and mean arterial pressure (MAP). The penile tissues, and MPG along with CN were collected from each group of rats for subsequent histological and molecular biological analysis. The rat Schwann cell line S16 was used for CCK-8 and wound healing assay, and the Schwann cell (SC) markers S100 and Pmp22, neuroinflammatory indicators IL-1 $\beta$ , TGF- $\beta$ 1, apoptosis-related proteins Caspase-3, Bax, Bcl-2 and nerve growth factor NGF were verified by PCR and WB.

**Results:** ICP/MAP indicated that the erectile function of rats in the BCNI model group was severely impaired, which was rescued in the BCNI+LBP-LD and BCNI+LBP-HD groups. Rats in the BCNI model group can highly express inflammatory indicators NF-kb, TNF- $\alpha$  and apoptosis-related proteins Bax, Caspase-3. TUNEL confirmed that the level of apoptosis in the penile tissue of BCNI rats increased. The above-mentioned penile inflammation and apoptosis changes can be inhibited by LBP. In addition, both immunofluorescence and WB confirmed that rats in the LBP-LD and LBP-HD groups highly expressed nNOS and down-regulated the expression of TH. In vitro experiments have shown that LBP can promote the proliferation and migration of SC, increase the expression of Pmp22 and NGF, and the inflammation and apoptosis-related proteins were down-regulated.

**Conclusion:** LBP can relieve the inflammation and apoptosis at the original site of nerve injury by promoting the proliferation and migration of SC, and secretion of NGF, thereby inhibiting the inflammation and apoptosis caused by hypoxia after denervation of penile tissue, and improving penile erection.

**Disclosure:** Work supported by industry: no.

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DIRECT-TO-CONSUMER VS. TRADITIONAL PRESCRIPTIONS OF PDE5 INHIBITORS: A CONTEMPORARY COST-ANALYSIS

*Schneider, D.<sup>1</sup>; Loeb, C.<sup>1</sup>; el-Khatib, F.<sup>1</sup>; Jenkins, L.<sup>2</sup>; Yafi, F.<sup>1</sup>*  
<sup>1</sup>UC Irvine; <sup>2</sup>Urological Associates of Southern Arizona

**Introduction:** After a text screen and focused telehealth visit, patients can now have access to phosphodiesterase inhibitor (PDEi) prescriptions through online direct to consumer (DTC) healthcare companies. Prescription of PDEis has unknown costs relative to the traditional office visit, especially with the availability of online discounts.

**Objective:** This study seeks to quantify the cost of DTC PDEi treatment compared to a traditional physician visit and local pharmacy prescription.

**Methods:** Nine pharmacies were included, including two DTC companies, two compounding pharmacies with national reach, three online Canadian pharmacies licensed by the Canadian International Pharmacy Association, and sixteen American pharmacy chains, representing all locally available chains. National pharmacies which are subsidiaries were grouped together. Prices for chains were determined using their publicly available price on GoodRx<sup>®</sup> with coupons in Irvine, CA (92612), Cleveland, OH (44101), New York, NY (10001), Dallas, TX (75201), and Birmingham, AL (35201). Cost of physician visit was determined using 2020 CMS reimbursement for a level 3 new patient visit. Prices for DTC companies were acquired from direct communication with the company. Where offerings did not align with 90 dose regimens, price per pill was determined and price for 90 doses was calculated.

**Results:** For a 90-dose supply of sildenafil 20mg, a physician visit and local prescription cost a mean of \$191.51 with a low of \$125.45, compounding pharmacy prescription cost a mean of \$218.28 with a low of \$144.35, and Canadian pharmacy prescription cost a mean of \$240.25 with a low of \$169.34, compared to a mean of \$220.00 and a low of \$180.00 for online DTC. For sildenafil 100mg, a physician visit and local prescription had a mean cost of \$524.11 with a low cost of \$137.16, compounding pharmacy prescription a mean cost of \$401.78 with a low cost of \$289.35, and

Canadian pharmacy prescription a mean cost of \$262.63 with a low cost of \$200.36, compared to a mean and low cost of \$900.00 for DTC. For tadalafil 5mg, a physician visit and local prescription cost a mean of \$205.79 with a low of \$125.80, compounding pharmacy prescription cost a mean of \$179.33 with a low of \$169.35, and “Canadian” pharmacy prescription cost a mean of \$207.59 with a low of \$195.34, compared to an average and low of \$720.00 for DTC. Finally, for tadalafil 20mg, a physician visit and local prescription cost a mean of \$643.70 with a low of \$161.00, compounding pharmacy prescription cost a mean of \$359.33 with a low of \$289.35, and Canadian pharmacy prescription cost a mean of \$291.74 with a low of \$229.00, compared to a mean of \$3420.00 and a low of \$2880.00 for DTC (Table 1).

**Conclusions:** Our findings suggest that local pharmacies, in conjunction with online coupons, provide a markedly less expensive option for fulfillment of PDEi prescriptions than online DTC services, compounding, or Canadian pharmacies, along with the established benefits of physician visits for screening. This is most pronounced if patients have flexibility in where they fill their prescriptions and can use the available local prices.

**Disclosure:** Work supported by industry: no. A consultant, employee (part time or full time) or shareholder is among the authors (FY: Coloplast (consultant), Cynosure (consultant) LJ: Hims (consultant)).

**Figure 1: Comparison of Direct-to-Consumer vs. Traditional Prescriptions of PDE5 inhibitors.**

	Sildenafil 20mg	Sildenafil 100mg	Tadalafil 5mg	Tadalafil 20mg
<b>Physician Visit plus Local Pharmacy</b>				
Mean	191.51	524.11	205.79	643.70
Low	125.45	137.16	125.80	161.00
<b>Physician Visit plus Compounding Pharmacy</b>				
Mean	218.28	401.78	179.33	359.33
Low	144.35	289.35	169.35	289.35
<b>Physician Visit plus Online Licensed Canadian Pharmacy</b>				
Mean	240.25	262.63	207.59	291.74
Low	169.34	200.36	195.34	229.00
<b>Online DTC</b>				
Mean	220.00	900.00	720.00	3420.00
Low	180.00	900.00	720.00	2880.00
Price difference between lowest categories	54.55	762.84	594.20	2719.00

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TREATMENT AND COMORBIDITIES OF PATIENTS WITH ERECTILE DYSFUNCTION BEFORE AND DURING COVID-19 IN THE UNITED STATES: A REAL-WORLD DATA ANALYSIS

*Goldstein, I.<sup>1</sup>; Hassan, T.<sup>2</sup>; Li, J.<sup>2</sup>; Riad, M.<sup>3</sup>; Vignesh, S.<sup>2</sup>; Zou, K.<sup>2</sup>*  
<sup>1</sup>Alvarado Hospital; <sup>2</sup>Viatrix; <sup>3</sup>Viatrix (Former Employee)

**Introduction:** Erectile dysfunction (ED) is usually a symptom of another medical condition. People with poor overall health are more likely to develop severe form of coronavirus disease 2019 (COVID-19) and may have unwanted symptoms such as ED. COVID-19-related stress, anxiety, and depression can also impact sexual health and possibly lead to ED. There are various treatment options for patients with ED. However, real-world evidence of the impact of COVID-19 on the treatment and comorbidities of patients with ED is limited.

**Objectives:** To estimate the impact of COVID-19 on the treatment and comorbidities of patients with ED in the United States.

**Methods:** This retrospective real-world data (RWD) analysis used the IQVIA PharMetrics® Plus claims database, which is a patient-Centric, closed claims database of fully adjudicated pharmacy, hospital and medical claims anonymized at the patient level, that captures the complete patient journey for all services billed to and covered by the patient’s health plan. We compared the ED treatment and comorbidities in adult males aged 18+ years with ED in the same 3-month periods before (01March - 31May, 2019) and during (01March – 31May, 2020) the COVID-19 pandemic. ED treatment included any ED-related claims, prescriptions of any and individual phosphodiesterase-5 inhibitor (PDE5i) medications (avanafil, sildenafil, tadalafil and vardenafil).

**Results:** See the table below for number of patients having ED-related claims, having any and individual PDE5i prescriptions, number of patients with COVID-19 diagnosis, and percentage of patients with each of the top 10 comorbidities, in the 3-month periods before and during COVID-19.

**Conclusions:** RWD showed that ED-related claims significantly decreased during the COVID-19 pandemic, reflecting the pandemic’s impact on ED patients’ health. However, the use of PDE5i medications remained stable during the pandemic. Key comorbidities including hypertension, hyperlipidemia, type 2 diabetes mellitus, benign prostatic hyperplasia with lower urinary tract symptoms, testicular hypofunction, and malignant neoplasm of the prostate, during the pandemic, compared with pre-pandemic period, highlighted the impact of the pandemic on ED patients’ health and need for managing their other comorbid chronic diseases.

**Disclosure:** Work supported by industry: yes, by Viatrix. A consultant, employee (part time or full time) or shareholder is among the authors (Viatrix).

	Before Covid-19	During Covid-19
Number of patients with ED-related claims	143,962	106,667
Patients with PDE5i Rx (% of patients with ED-related claims)	18,977 (13.18%)	14,693 (13.78%)
Patients with sildenafil Rx (% of patients with ED-related claims)	10,170 (7.06%)	7,274 (6.82%)
Patients with tadalafil Rx (% of patients with ED-related claims)	8,767 (6.09%)	7,417 (6.95%)
Patients with vardenafil Rx (% of patients with ED-related claims)	440 (0.31%)	246 (0.23%)
Patients with avanafil Rx (% of patients with ED-related claims)	102 (0.07%)	88 (0.08%)
Covid-19 Diagnosis	0 (0.00%)	1,970 (1.85%)
Total 10 comorbidities: % of patients with ED-related claims	%	%
Essential (primary) hypertension	38.56	37.60
Hyperlipidemia, unspecified	16.88	15.42
	16.65	10.44

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	Before Covid-19	During Covid-19
Encounter for general adult medical examination without abnormal findings		
Benign prostatic hyperplasia with lower urinary tract symptoms	13.93	13.53
Testicular hypofunction	13.39	14.47
Type 2 diabetes mellitus without complications	11.46	10.65
Mixed hyperlipidemia	10.04	10.05
Malignant neoplasm of prostate	8.58	8.49
Gastro-esophageal reflux disease without esophagitis	7.56	7.08
Benign prostatic hyperplasia without lower urinary tract symptoms	7.06	6.37

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ASSESSMENT OF THE RESULTS OF TREATMENT ERECTILE DYSFUNCTION IN DIABETIC PATIENTS BY TADALAFIL 20MG ONCE EVERY THREE DAYS

Nguyen, Q.<sup>1</sup>; Van, H. Do<sup>2</sup>

<sup>1</sup>Vietnam-Germany University Hospital; <sup>2</sup>Haiduong Medical Technical University

**Introduction:** Tadalafil (a PDE5 inhibitor) is used to treat erectile dysfunction (ED), which can be dosed on-demand or daily. Tadalafil has a long half-life, so it has a long-lasting effect. Men with ED also have a preference for a treatment that is time-independent

**Aim:** To evaluate the efficacy and safety of tadalafil 20 mg with a dose of one tablet every three days in the treatment of erectile dysfunction among diabetic patients.

**Material and methods:** A prospective study was carried out on 22 men with diabetes who were examined with symptoms of erectile dysfunction satisfying the selection criteria at Center for Andrology and Sexual Medicine - VietDuc University Hospital from June 2020 to June 2021. These patients were treated with tadalafil 20 mg once every three days.

**Results:** There were 22 patients included in the study, mean age was 52.1 years old. The baseline degree of erectile dysfunction was mainly mild to moderate (accounting for 73%). The average IIEF-5 score before and after treatment was 12.2 and 19.3, respectively. The improvement of IIEF-5 score was statistically significant (p <0.05). Headache was the most common side effect, accounting for 13.6%, followed by facial flushing, nasal congestion, myalgia and back pain with 9.1%, palpitations and digestive disorders with 4.5%.

**Conclusion:** tadalafil 20mg dosed one tablet every three days for the treatment of erectile dysfunction among diabetic patients has a statistically significant effect; hopefully, providing an additional option for the safe treatment of erectile dysfunction in diabetic patients.

**Disclosure:** Work supported by industry: no.