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**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.546226>Available online at: <http://www.iajps.com>**Research Article****RATIONAL USE OF NONSTEROIDAL ANTI-
INFLAMMATORY DRUGS IN BENIGN PROSTATIC
HYPERPLASIA**

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Received: 12 March 2017**Accepted:** 26 March 2017**Published:** 28 March 2017**Abstract:**

The objective of the study was to develop a relationship between nonsteroidal anti-inflammatory drugs and enlarged prostate. This report emphasizes the use of nonsteroidal anti-inflammatory drugs in benign prostatic hyperplasia both clinically and by changing the lifestyle. A questionnaire based study was carried on 50 benign prostatic hyperplastic patients from July to September 2016. The study was done at Mayo hospital and Services hospital, Lahore. The patients aged between 40-80 years were selected randomly and interviewed face to face. BPH is characterized by inflammation. So, anti-inflammatory drugs NSAIDs have beneficial effect in prostatic diseases such as prostatic hyperplasia. These medications were observed to lessen the symptoms and prevalence of BPH. The relation of NSAIDs and BPH is still controversial. These drugs are used to treat BPH but their prolonged use exerts some unwanted effects. Patients were advised some life style changes to minimize the risk.

Keywords: *Benign prostatic hyperplasia, NSAIDs, Nocturia, Inflammation.*

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INTRODUCTION:

BPH is a disease state of prostate gland. The site of prostate is under the bladder and in front of the rectum. Its job is to contribute fluid to semen as prostate is the part of male reproductive system. Benign prostatic hyperplasia is also known as benign prostatic hypertrophy[1]. Treatment of prostate growth varies in each case. Once the prostate growth starts, if frequently continues, except the physician starts medical therapy. The growth of prostate starts in two different ways. In one type, cells divide around the urethra and press it. In second type of growth the cells of middle-lobe of prostate grow into the urethra and the outlet area of bladder. In this type of prostate growth surgery is required[2].

Diagnosis of BPH is done by laboratory tests mainly urine test, digital rectal exam also called physical examination which tells the size of prostate. In many cases a prostate specific antigen (PSA) is done to diagnose the prostate cancer[3].

BPH cause urinary symptoms among older men i-e continual urination, difficulty to start urination, nocturia (excessive urination during the night), weak urine flow and an immediate need to urinate. Recent in-vitro and epidemiological evidence has shown that risk factors of BPH are age, genetics, endocrine status, inflammation, and lifestyle[4]. It was suggested that prostatic diseases progressed by inflammation. Nonsteroidal anti-inflammatory drugs (NSAIDs) are used to inhibit inflammation and lessen the risk of BPH. NSAIDs have anti-inflammatory and antipyretic effects and cure many diseases as well as prostatic diseases[5].

The NSAIDs exert their action by inhibiting the activity of cyclooxygenase enzymes (COX-1 and COX-2) and lower the prostaglandin levels. The development of BPH is less in those who use NSAIDs regularly. Mayo Clinic researchers have found that regular intake of NSAIDs, such as naproxen, panadol or ibuprofen may prevent or delay benign prostatic hyperplasia[6].

In a research using data from 5,900 men age 45 and older, it was observed that men who used NSAIDs regularly were more likely as those who did not use this medication to develop acute urinary retention, inability to urinate[7]. When compare these findings with those from a current U.S. study of more than 2,400 men who had no history of urological problems. Those who used NSAIDs regularly were less prone to develop BPH. This apparently opposite results may show two different actions of NSAIDs, according to the report[8]. Researchers of Mayo Clinic have found that use of nonsteroidal anti-inflammatory drugs (NSAIDs) such as diclofenac, naproxen or panadol may prevent or delay the occurrence of benign prostatic hyperplasia[9].

Compared to this, different studies have shown that the uses of NSAIDs worsen the symptoms of prostatic diseases and the relationship between these drugs and prostatic disease remains controversial. However, current opinion suggests that use of these anti-inflammatory drugs would be beneficial for most prostatic diseases, including BPH and prostate cancer[10].

METHODOLOGY:

The study done in this report is exploratory. An observational and questionnaire based study was conducted from July to September 2016 about the rational use of NSAIDs in benign prostatic hyperplasia. 50 inpatients were randomly selected for the study at Mayo hospital and Services hospital, Lahore. . The age of the patients was between 40 to 80 years. A data collection form was designed and was filled during face to face interviews with the patients and health care providers. The data collected was computed and results were interpreted in the form of graphs.

RESULTS:

During the study it was observed that medication prescribed by the doctor to patients suffering with BPH was 45% NSAIDs in which 50% was diclofenac, 36% naproxen, 6% Panadol and 8% was ibuprofen. Other medications were 20% antibiotics and 35% alpha blockers. 60% patients were experienced relieved symptoms when they took their medicines properly. 55% patients complaint that they had stomach irritation, 24% had heartburn, 15% were experienced bleeding and 6% developed ulcer after taking NSAIDs. 64% patients were suggested to drink less or space out drinking rather drinks at once, 52% were recommended to urinate immediately when needed and 30% asked to stop smoking.

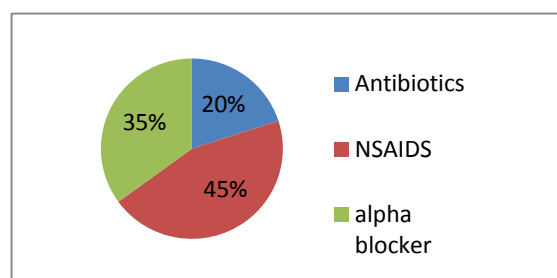


Fig 1: Prescribed medications:

Most of the patients were prescribed NSAIDs and alpha blocker. NSAIDs were used to relieve pain and inflammation. Some patients were also prescribed antibiotics to treat infections.

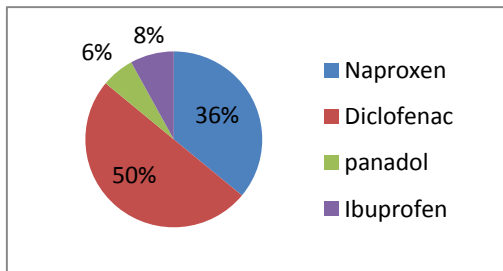


Fig 2: Prescribed NSAIDS

Naproxen was the treatment of choice. It was effective having lower side effects.

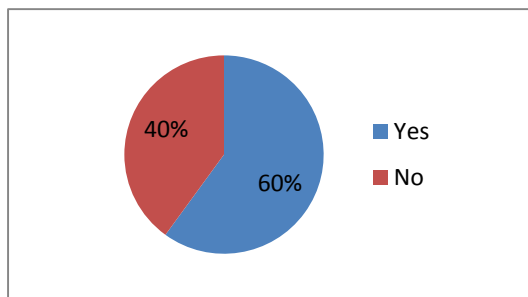


Fig 3: Alleviation of symptoms:

After using medication majority of the patients had feeling of relieved symptoms.

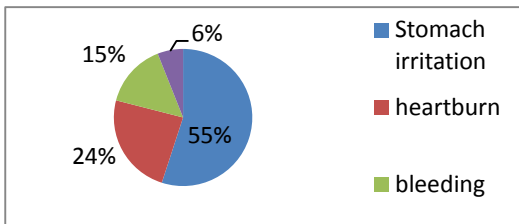


Fig 4 :Side effects of NSAIDs medication:

After using medication patients had experienced some unwanted effects. Most common were stomach irritation, heartburn, bleeding and ulcer.

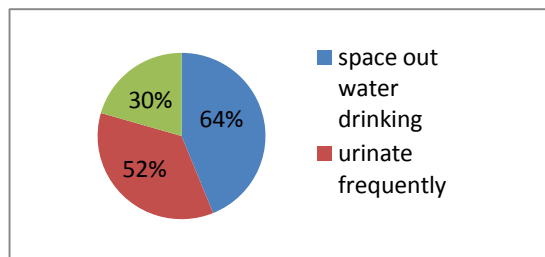


Fig 5: Life style changes prescribed by Physician:

To reduce the occurrence of benign prostatic hypertrophy patients were advised to adopt some life style changes like drink less before going to bed, don't drink too much at a time rather space our water drinking, urinate whenever needed and those patients who smoke immediately stop smoking.

DISCUSSION:

Benign prostatic hyperplasia effects majority of the men as they age. Inflammation is the common cause of the development and progression of BPH. A study suggest that daily use of NSAIDs has been approved beneficial to improve symptoms of BPH, increased urine output, and decreased prostate size and prostate-specific antigen levels[11]. NSAIDs are also recommended as a novel choice to treat BPH because in some cases use of NSAIDs apparently lessens the mean nocturnal urination frequency[12]. A trial study in 2001 have reported a number of side effects associated with NSAID treatment [13], others have reported the opposite results. For example, Schenk et al. in a study of NSAID and risk of BPH, using 4,735 men without BPH as a baseline, found that NSAIDs were not associated with the risk of BPH [14]. In contrast Parsons, J. K. in his study the benign prostatic hyperplasia and male lower urinary tract symptoms: epidemiology and risk factors have reported that NSAIDs increased the risk of BPH and prevention required some life style changes[15].

In this study we have found that BPH was cured with medical therapy and with surgery. The medication suggested for BPH were alpha blockers in which treatment of choice was tamsulosin HCL which treat the symptoms by relaxing muscles in the prostate. Most prescribed NSAIDs were intramuscular diclofenac, panadol and naproxen. Like first two reported study we also found that Nonsteroidal anti-inflammatory drugs (NSAIDs) were used for their antipyretic, anti-inflammatory and analgesic effects but in contrast to last reported study majority of the patients claimed that they had relieved symptoms after taking medication. After surgery these drugs were used to reduce pain and they inhibit cyclo-oxygenase-2 to prevent the synthesis and release of prostaglandins.

Likewise trail study which was performed in 2001 we also reported that the prolonged use of medication had some unwanted effects. The side effects usually observed were stomach irritation, heartburn, bleeding and ulcer. But these effects are not as much common as mention in last reported study.

In our study we observe that patients needed to develop some changes in their daily routine to

minimize the risk or symptoms associated with BPH. In this context some life style changes were advised to the patients. They were suggested to drink less water before going to bed at night, urinate immediately when urge strike and stop smoking because it may aggravate the symptoms.

CONCLUSION:

BPH becomes a very common disease in men as they age. The symptoms of BPH may affect their quality of life. The relationship between the NSAIDs and BPH has remained controversial. Somehow NSAIDs are used to treat nocturia and inflammation in prostatic diseases and lower the symptoms. These drugs reduced pain after surgery and prevent the synthesis and release of prostaglandins. But their prolong use may cause some severe side effects and even worsen the symptoms of BPH.

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