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RESEARCH ARTICLE

SAFETY AND EFFICACY OF SILODOSIN-DUTASTERIDE IN THE MANAGEMENT OF BENIGNPROSTATIC HYPERPLASIA

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Abstract

Background Information: Currently alpha1-adrenoreceptor blockers with the combination of 5- alpha reductase inhibitors are widely used as first-line therapy to improve Lower urinary tract symptoms (LUTS) associated with Benign Prostatic Hyperplasia (BPH).

Aims And Objectives: The aim of this study was to evaluate the Efficacy of combination drug Silodosin and Dutasteride in Benign Prostatic Hyperplasia patients with mild to severe symptoms.

Materials And Methods: Thepresent hospital based Prospective Interventional Observational study was conducted in Department of Urology and Surgery out and inpatient Department,Lalitha Super Speciality Hospital during the time period of 1st October 2020 to 31st March 2021 and 70 cases of BPH with mild to severe symptoms and prostate volume of greater than30cc were included in the study

All the patients were administered the drug which is a combination of Silodosin (8mg) and Dutasteride (0.5mg) once daily for 3 months after obtaining ethical clearance and administering informed consent .The patients condition was done followupfor the changes in Prostate Size,PVR,IPSS which were recorded and analysed using appropriate statistical tools.

Results: The study showed that there was a significant decrease in prostate size when compared with before treatment i.e.11.31±5.99and a significant decrease in PostVoidResidual volume when compared with before treatment i.e 43.95±1.091.During therapy the IPSS score was improved to 9.5±1.567 which was found to be statistically significant ($p<0.05$).After 2 months of the treatment there was improvement in the patient condition ,as we saw the significant change in prostate size, post void residual volume and IPSS score after treatment.The patient with severe, moderateand mild benign prostate hyperplasia was improved by the treatment .

Conclusion: There is statistically significant improvement in PVR ,IPSS and prostate size .Thus Silodosin 8mg and dutasteride 0.5mg can be used for effective relief of LUTS caused due to BPH in mild to severe cases.

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Introduction:-

The prostate is a glandular body surrounding the neck of the bladder and the urethra of the male. It is named from its position in front of the seminal vesicles. It is located in the anterior part of the pelvis, behind and below the level of the pubic symphysis, posterior to the triangular ligament of the urethra, with which it is connected by its capsule (Adams, 1853).In some cases the prostate gland is absent and urethra may groove into it and in some cases the prostate forms cylinder around the urethra (James Stannus Hughes, 1870).**Prostategland** located directly beneath the urinary bladder in the male, which adds secretions to the sperm during the ejaculation of semen.The two ejaculatory ducts, which carry sperm and the fluid secreted by the seminal vesicles, converge and narrow in the centre of the prostate and unite with the urethra. The urethra then continues to the lower segment of the prostate and exits near the apex (Swati chopra, 1999).There are four basic anatomic zones of the prostate, the anterior zone, the peripheral zone, the central zone, and the transition zone. The transition zone surrounds the urethra, and although this region accounts for only 10% of prostate glandular tissue in young men. Indeed, it is in the transition zone is where benign prostatic hyperplasia (BPH) develops (American journal association, 2020 april).

The principal function of the prostate is to provide the proteins and ions that form the bulk of the seminal fluid (CG R. , 2008). Benign prostatic hyperplasia (BPH) is a common disorder that appears in men and increases in incidence with age. It is characterized by the non-malignant growth of the prostate gland that occurs in most men >40 years of age (CG, 2005).At a population-level, the prevalence of BPH increased dramatically between 1998 and 2007 in the US, nearly doubling in the number of cases (stroup SP, 1998 to 2008).International studies have suggested that Western populations have significantly higher prostate volumes compared to those from southeast Asia (jin B, 1999 oct).Testosterone produced in the testes is converted to dihydrotestosterone (DHT) by 5-alpha-reductase in prostate stromal cells and accounts for 90% of total prostatic androgens (chughtai B, 2016 MAY 5). DHT has direct effects on stromal cells in the prostate, paracrine effects in adjacent prostatic cells, and endocrine effects in the bloodstream, which influences both cellular proliferation and apoptosis (cell death) (CG R. , 2008).BPH can be also be daignosed by Post-void residual volume (whether the bladder is emptied properly) and IPSS (international prostate symptom score). Blood urea nitrogen (BUN) and creatinine levels may be used in diagnosing and monitoring BPH (Danielle Skinder, 2016,august 29).The IPSS can be used to assess the impact of LUTS on quality of life and their effect on patients suffering from BPH. They are useful when quantifying the disease burden on the patient and can be used to stratify patients into disease categories fortreatment.In those with LUTS, treatment options range from watchful waiting to medical and surgical intervention and depend on the degree of disease burden to the patient (as assessed by IPSS) (McVary KT, 2010).For men with mild BPH symptoms (IPSS less than 8), watchful waiting is recommended. Men suffering from moderate to severe symptoms firstly may consider lifestyle changes, and also require pharmacologic treatment orsurgery.Medical therapy includes Alpha-blockers such as Tamsulosin,Silodosin and Alfuzosin,5 alpha-reductase inhibitors such as finasteride and dutasteride.Antimuscarinics such as solifenacin,tolterodine,andoxybutynin andphosphodiesterase-5 inhibitors like tadalafil (Roehrborn CG, 2010)**.** Surgical treatment for BPH is indicated when medical treatment fails to show a sufficient response, and when symptoms are severe, if there is chance for complications.Options include Opensurgery,Transurethral resection of the prostate (TURP), and Transurethral holmium laser enucleation of the prostate (HoLEP) (Yin L, 2013).

Materials And Methods:-

Thepresent hospital based Prospective Interventional Observational study was conducted in Department of Urology and Surgeryout and inpatient Department,Lalitha Super Speciality Hospital ,Guntur during the time period of 1st October 2020 to 31st March 2021 and 70 cases of BPH with mild to severe symptoms and prostate volume of greater than30 cc were included in the study

All the patients were administered Silodosin (8mg) and Dutasteride (0.5mg) once daily for 3 months after obtaining ethical clearance and administering informed consent .The patients condition was done follow up for the changes in Prostate size,PVR,IPSS which were recorded and analysed using appropriate statistical tools.

Inclusion Criteria:

1. Patient with age group greater than 50 years who have symptomatic BPH.
2. Patient of Male gender.
3. Patients with Post-void residual (PVR) greater than 50 ml.
4. Patients with Prostate size greater than 30 and and less than or equal to 80 gm.

Exclusion Criteria:

1. Patients with age group less than 50 years.
2. Patients who areinterested in maintaining fertility.
3. Patients with other diseases like BladderCancer,Urethral or UreteralStones are excluded.
4. Patients with Post-void residual (PVR) less than 50 ml.

Statistical Consideration:

All the raw data was collected and entered in excel sheet 2007 in windows 8 version, the statistical analysis was done in SPSS 16.0 software by an appropriate statistical methods like Two-sample PairedT test for knowing the significant p-value <0.005(confidence interval 95%).

Results:-

Over a period of 6 months study, data of 70 patients with benign prostatic hyperplasia have collected. Patients including diterima were based on symptoms,Preparatesize,postvoid residual volume and IPSS scoreThe study showed that there is a significant decrease in prostate size when compared with before treatment i.e11.31 ±5.99 and a significant decrease in post void residual volume when compared with before treatment i.e 43.95±1.091.During therapy the IPSS score was improved to9.5±1.567 which is found to be statistically significant ($p<0.05$).

Prostate Size:

Table 5.3:- Paired Sample Statistics.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Prostate size before treatment	44.74	70	14.707	1.758
	Prostate size after treatment	33.43	70	8.717	1.042

Post void residual volume (ml):

Table5.6:- Paired Sample Statistics.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Postvoid residual volume before treatment	119.41	70	12.016	1.436
	Postvoid residual volume after treatment	75.46	70	10.925	1.306

IPSS SCORE:

Table 5. 9:- Paired Sample Statistics.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	IPSS score before treatment	22.01	70	6.910	.826
	IPSS score after treatment	12.51	70	5.343	.639

Discussion:-

According to our study we observed that 8mg & 0.5mg dose of silodosin and dutasteride (Silodal-D8) showed significant improvement in reducing symptoms of the BPH patients.Among 70 patients after 1st review35.7% of patients were treated. After 2nd review 64.2% of patients were treated. Finally the study states that the patient condition was gradually improved with treatment follow up. This shows how effective the therapy was and in the span of this time period we didn't have any serious side effects noticed but we observed mild dizziness in 10 patients out of 70 patients. A Study byHee Ju Cho ,Tag Keun Yoo,α1-adrenergic receptor antagonists are commonly used to treat male LUTS and BPH. Silodosin at a daily dose of 8 mg was effective, improving the IPSS . Retrograde or abnormal ejaculation was the most commonly reported side effect in the patients treated with silodosin.In our study we observed only mild dizziness in 10 patients out of 70 patients. Retrograde or abnormal ejaculation is not reported in the patients with silodosin and dutasteride (HIFU-PROSTATE, 2021).In our study we observed that

prostate size where the mean of base line data is 44.74 which is before treatment and after treatment mean is 33.43 and the mean difference is 11.314 (Ballstaedt & WoodburY, 2021).In our study we observed that post void residual volume where the mean of baseline data is 119.41 which is before treatment and after treatment mean is 75.46 and the mean difference is 43.957.The study showed that there is a significant decrease in prostate size when compared with before treatment i.e11.31± 5.99 and a significant decrease in postvoidresidual volume when compared with before treatment i.e. 43.95±1.091.During therapy the IPSS score was improved to9.5±1.567 which was found to be statistically significant ($p<0.05$).After 2 months of the treatment there was improvement in the patient condition, as we can see the significant change in prostate size, postvoidresidual volume and IPSS score after treatment.The patient with severe, moderate, and mild benign prostate hyperplasia was improved by the treatment.

Conclusion:-

In the present study, Silodosin and dutasteride(Silodal-D8) treatment in the patients with Benign Prostate Hyperplasia for about 3 months period ,weobserved the significant changes in the clinical and functional outcomes like improvement in patients symptoms and size of the prostate was decreased ,post void residual volume levels are varied and improvement in IPSS score as from severity of the disease status was changed to moderate and from moderate condition to mild condition avoiding further exacerbation of condition , with the occurrence of mild dizziness after the drug administration .Out of 70 patients 10 patients complain of mild dizziness without any severe adverse effects. Finally it can be concluded that our combination therapy of Silodosin-dutasteride possesses significant beneficial effects in Benign Prostate Hyperplasia and the effectiveness of the combination drug (Silodal-D8) sildoosin and dutasteride was more and and is fairly safe and well tolerated (Jamie J. Coleman, 2021).

Conflicts Of Interest:

There are no conflicts of interest.

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