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RESEARCH ARTICLE

Valsartan superior amlodipine in the protection of patients have moderate hypertension with cardiovascular risks in Najaf province.

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Abstract

This study was between 2/04/2015 to 1/05/2015 to know the best drug to moderate hypertension patients. The data were obtained from the Al_Sadar and Al_Hakeem hospitals. The diagnosis of moderate hypertension (140 to 159 SBP) patients was depended on internal physicians were employees in mentioned hospitals. The data collection from moderate hypertension (n=35) received valsartan (Diovan 80 mg) and other group (n=35) received amlodipine 5 mg. The healthy group (n=20) was health people don't have hypertension and other cardiovascular risks. This study explained that patients received valsartan 80 mg have efficacy and better in protection from recurrent cardiovascular risks (angina and stroke). Also our study clear up that same group have less number in heart failure occurred.

Introduction:-

The World Health Organization has estimated that high blood pressure causes one in every eight deaths, making hypertension the third leading killer in the world. Globally, there are one billion hypertensives and four million people die annually as a direct result of hypertension (Khatib and El-Guindy,2005). Hypertension is a major risk factor for ischaemic and haemorrhagic stroke, myocardial infarction, heart failure, chronic kidney disease, cognitive decline and premature death, untreated hypertension is usually associated with a progressive rise in blood pressure. The vascular and renal damage that this may cause can culminate in a treatment-resistant state (NICE,2011).

The prevalence of hypertension increases with advancing age to the point where more than half of people 60–69 years of age and approximately three-fourths of those 70 years of age and older are affected (Burt VL *et al*.,1995). The age related rise in SBP is primarily responsible for an increase in both incidence and prevalence of hypertension with increasing age (Franklin SS *et al*.,1997). By 2025, the number of people with hypertension will increase by about 60% to a total of 1.56 billion as the proportion of elderly people will increase significantly (Kearney PM *et al.*,2005).

There are several numbers of drugs are used to treatment the hypertension patients and each one have specific action and side effect, so the aim of this study was to compare between two groups of drugs which are angiotenstion receptor blockers (ARBs) specifically (valsartan) and Calcium channel blockers (CCBs) specifically (amlodepine) on the risk factors of hypertension.

Hypertension :-

Hypertension, defined as a persistent raised blood pressure of 140/90mmHg (Williams B, 2004; NICE, 2004; SIGN,2001). Hypertension is usually defined by the presence of a chronic elevation of systemic arterial pressure above a certain threshold value (Kannel WB,1997). Since the proportion of hypertensive people will increase dramatically worldwide, the prevention, detection, treatment and control of this condition should be a top priority (Kearney PM *et al*.,2005).

Basic Physiology of Blood Pressure Control

The control of blood pressure requires constant adjustment of cardiac
output and peripheral resistance. Output of blood from the heart via the aorta is dependent upon ventricular filling pressure, which is a direct function of atrial pressure (=preload), ventricle contractility (=force of contraction), heart rate, and vascular resistance (=afterload). Though it may be confusing that output is dependent upon vascular resistance while the product of output and resistance determines blood pressure, simply think of the output of blood from the heart as a force and the blood-filled narrow vessels into which the newly oxygenated blood is pumped as a variably opposing force (or a variable volume of liquid <=different mass> having momentary inertia, for those of you more inclined toward physics). More important to the present discussion, there are two structural components to the vascular system essential for determining overall resistance: narrow arterioles, which exert the major force of resistance to cardiac output, and the large capacitance venules, which determine the volume and pressure of the blood returning to the heart. Overall blood volume, the third essential component in determining blood pressure, is regulated by electrolyte balance by the kidney via aldosterone whose level is controlled by angiotensin II, generated by the renin-angiotensinogen system, and K+ (WalkerL. 2004).

BP =Heart Output X Peripheral Vascular Resistance

Types of Hypertension

- There are two main types are:

1- Essential hypertension

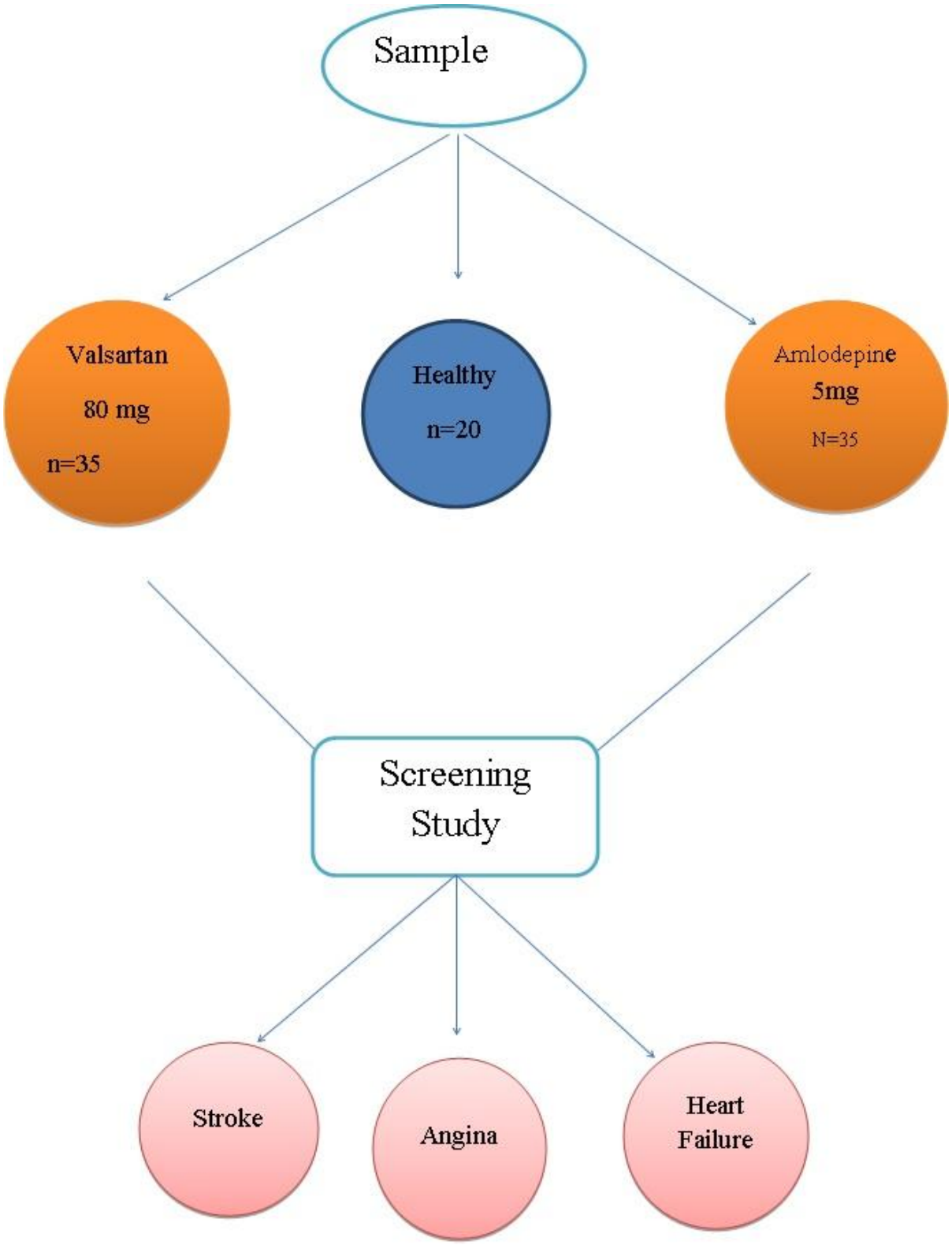
The great majority of the patients 90% have essential hypertension (cause not known) .Which can be only ameliorated by lifelong pharmacological therapy .

2-Secondary hypertension

Secondary hypertension occurs in only 2% to 10% of patients. It's the result of specific and treatable cause .These patients may be amenable to curative treatment Thereby sparing them from life-long unnecessary medical therapy.

Materials and Methods:-

Study design



Sample collection:-
Our samples are collected from male human in Al_Sadar and Al_Hakeem hospitals from different departments such as internal, diabetic, blood collection and etc

Healthy:-
The healthy samples in our study are character by the following:
1- Age: 40-50 Year.
2- Hypertension State: Normal.
3- Without any diseases.

Patients:-
The patients samples in our study are character by the following:
1- Age: 40-50 Year.
2- Hypertension state: Moderate.
3- Without other diseases
3.2.3 Information card

The information card that used to collect the evidences of patients was as the following:

Information card	
Name	
Age	
Gender	
Region	
Type of HT	
Other Diseases	

Samples excluding:-
Healthy samples:-
Samples are excluded from the healthy samples including: age down or above the range of 40-50 year, without cardiovascular risks, female sex.
Patients samples:-
Samples are excluded from the patients samples including: age down or above the range of 40-50 year, mild or severe hypertension and female sex.

Results:-

Comparison of hypertension patients with stroke risk.
Figure (4-1) shows that hypertension patients treated with (valsartan 80 mg) have efficacy in the stroke recurrent as compare with hypertension patients treated with (amlodipine 5 mg).

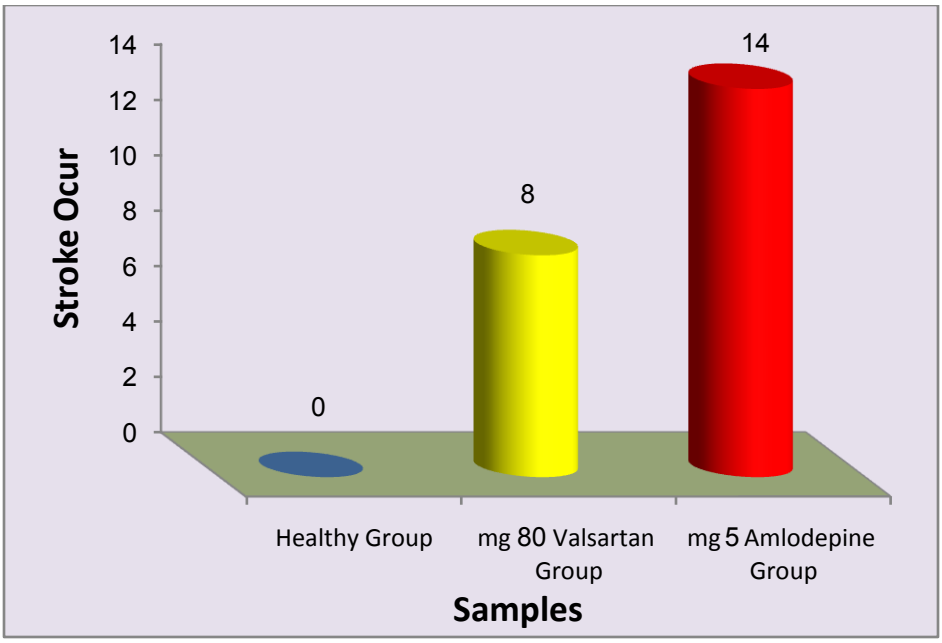


Figure (4-1): show comparison between two groups of hypertension drugs.

Comparison of hypertension patients with angina risk.

Figure (4-2) shows that hypertension patients treated with (valsartan 80 mg) have efficacy in the angina recurrent as compare with hypertension patients treated with (amlodipine 5 mg).

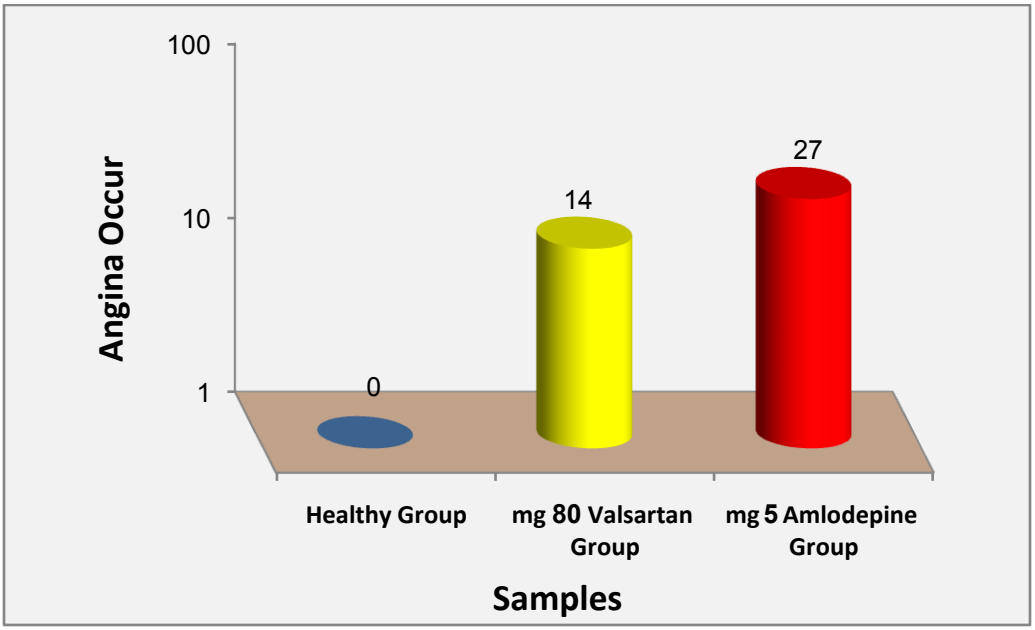


Figure (4-2): Show comparison between two groups of hypertension drugs.

Comparison of hypertension patients with HF risk.

Figure (4-3) shows that hypertension patients treated with (valsartan 80 mg) have efficacy in the HF as compare with hypertension patients treated with (amlodipine 5 mg).

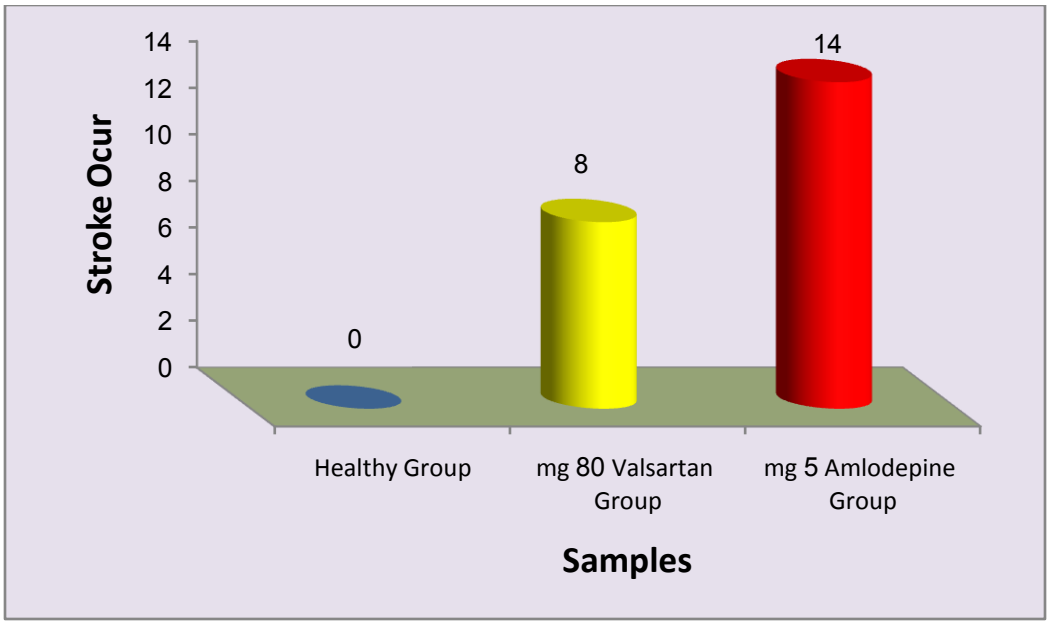


Figure (4-3): Show comparison between two groups of hypertension drugs.

Discussion:-

Figure (4-1) show that patients receive valsartan 80 mg have superior to patients that have receive amlodipine 5mg in angina recurrent, and that indicate that valsartan offer good pressure control and this result is agreement with (Ruilope *et al*., 2005) that demonstrated valsartan provides greater SBP and pulse pressure reductions vs .amlodipine, also he indicated that Valsartan 160 provides greater 24hour day and night time BP reduction vs. amlodipine 10.

Our result showed that valsartan may be offer protection against cardiovascular and this agreement with (Conen *et al*., 2008) who made clear that valsartan reduces inflammation markers in patients with stage 2 HTN.

Figure (4-2) showed that hypertension patients receive valsartan 80 mg have efficacy in reduction of stroke recurrent, opposite patients that have receive amlodipine 5mg. Duperz *et al* .,(2007) indicated that valsartan increases small artery elasticity in asymptomatic patients with high CV risk. This result explained the efficacy of valsartan in reduces the CV risks in hypertension patients and this in accordance with (Rodriguez perez *et al*., 2005) who that said valsartan effectively reduces BP in patients with arterial hypertension and type 2 diabetes. Latini *et a*.,(2002) valsartan reduces brain natriuretic peptide (BNP) in patients with CHF and this agreement with our result that indicated valsartan have favorable effect in reducing the stroke recurrent.

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