Comparative Study Between the Efficacy and Tolerability of Isradipine and Nifedipine in the Treatment of Mild to Moderate Hypertension

Thesis

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The Master Degree In Cardiology

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بسم الله الرحمن الرحيم

قالوا سبحانك لا علم لنا الا ما علمتنا

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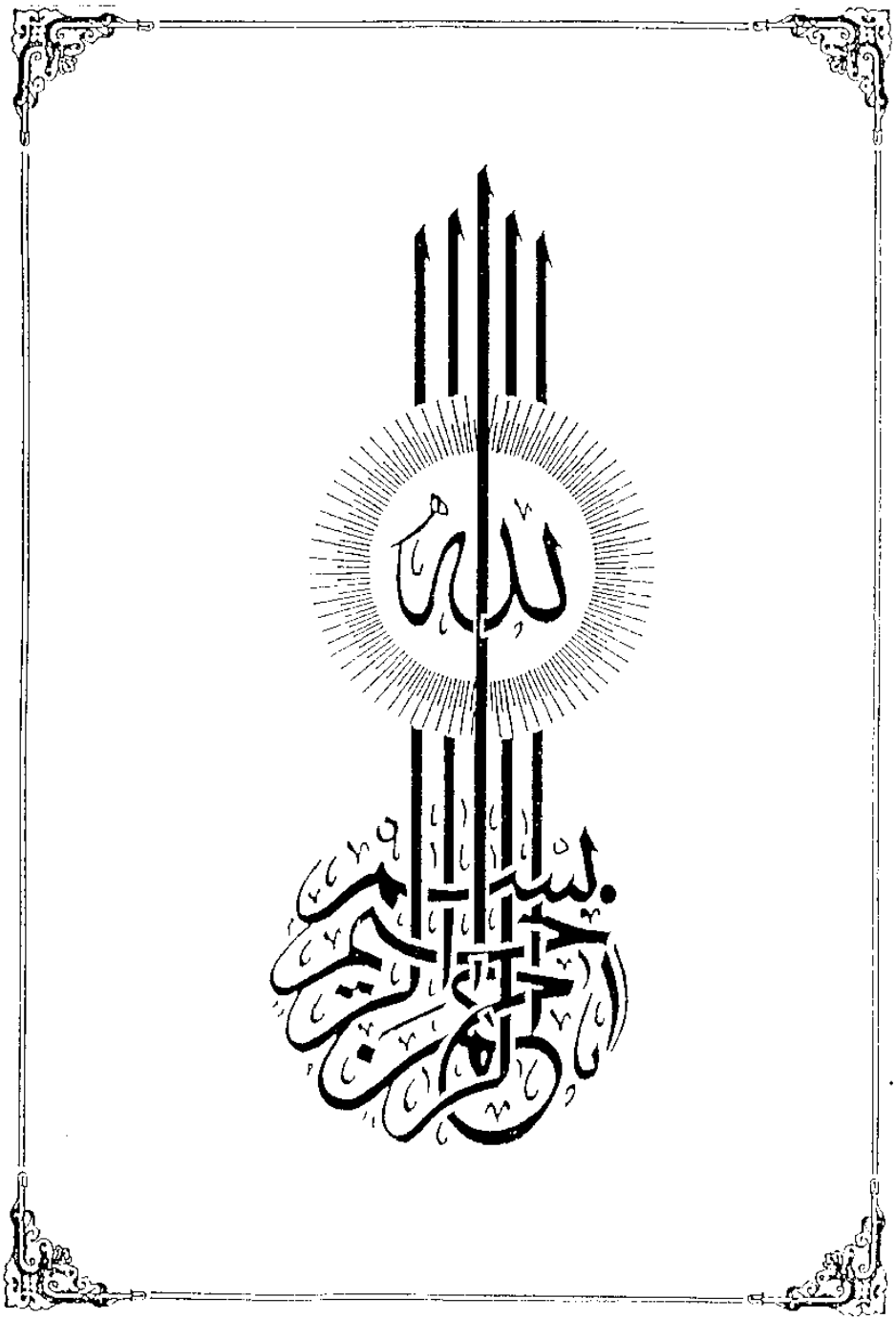

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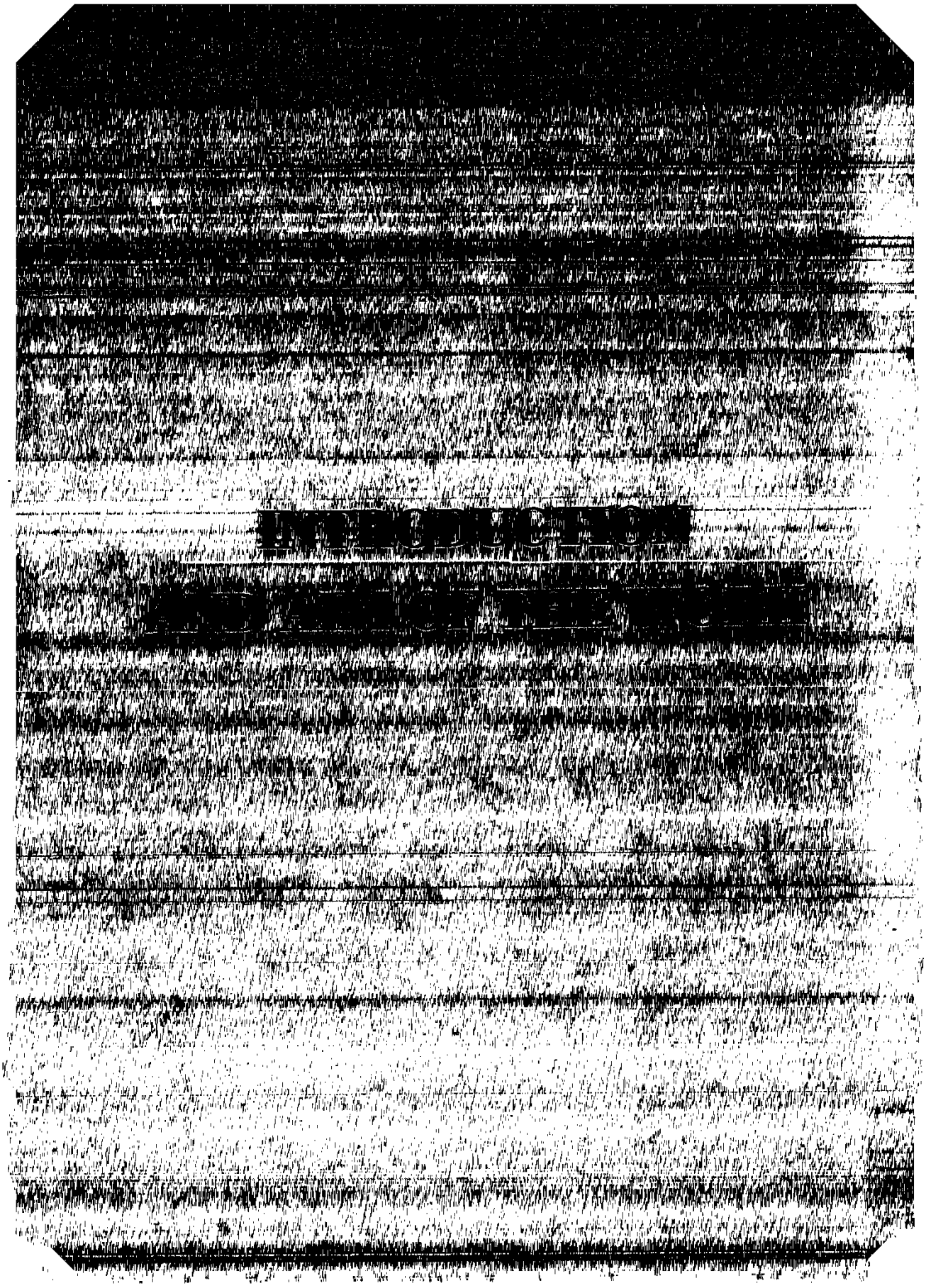
ATP	=	Adenosine triphosphate.
ATP ase	=	Adenosine triphosphatase.
BP	=	Blood pressure.
CAMP	=	Cyclic adenosine monophosphate.
CA^{++}	=	Calcium.
DL	=	Deciliter.
ECG	=	Electrocardiogram.
HDL	=	High density lipoprotein.
LDL	=	Low density lipoprotein.
MG	=	Magnesium.
MG ATPase	=	Magnesium adenosine triphosphatase.
mg	=	Melli gram.
µG	=	Micro gram.
PN 200 - 110	=	Isradipine.
SAN	=	Sine atrial node.



Introduction and aim of the work

Introduction :

Calcium ions play a critical role in many vital biological processes in all cells.

Within the cardio-vascular system, calcium is importantly involved in the activation of cardiac cells the genesis of the action potential, the coupling of electrical activation to myocardial activation and the constriction of vascular smooth muscle.

Calcium antagonists which block the entry of calcium into cardiac and vascular smooth muscle cell, represent one of the most important development in cardiovascular therapeutics in the latter have of this century[1].

In essentially hypertension, indices of calcium and magnesium metabolism are shifted in both directions away from average normotensive values and are related to concurrent shift in the rennin system[2] thus patients with low rennin essential hypertension had the lowest level of ionized calcium . These levels were significantly lower than those in patients with medium or high rennin hypertension or in normotensive controls.

Plasma rennin activity demonstrated a significant positive correlation with serum levels of ionized calcium and varied inversely with serum magnesium levels.

The action of the calcium antagonists appears to depend on the level of rennin activity and of serum ionized calcium these agents such as isradipine and nitrendipine are most effective in lowering blood pressure in patents with the lowest level of rennin activity and ionized calcium and are relatively in effective in patients with high rennin[3] essential hypertension.

The newer calcium entry blockers appear to have more pronounced selectivities than verapamit nifedipine and deltiazem.

Agents such as nisoldipine, darodipine,isradipine and several others are almost devoid of cardiodepressant effects at therapeutic doses, although other actions at the level of the heart are also apparent.

Isradipine is a new calcium antagonist with a very high affinity for L-type calcium channels. As a result isradipine shows a marked selectivity for a few specific tissues such as the sinus node but not atrio-ventricular conduction and

especially the coronary, cerebral and skeletal muscle vascular beds[4].

Aim of the work

The aim of this study is to compare between the efficacy and tolerability of isradipine and nifedipine in treatment of mild to moderate essential hypertension.

REVIEW OF LITERATURE