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EARLY MULTI-SYSTEM ORGAN DAMAGE IN ADULTS WITH ARTERIAL HYPERTENSION

Introduction

Metabolic abnormalities in adults are often grouped under cardiometabolic disease or metabolic syndrome can quietly affect several organs long before any major illness appears. When the body lives for years with low-grade inflammation, insulin resistance, and unhealthy fat buildup, organs such as the heart, kidneys, and liver start to show early signs of strain. These changes are often subtle at first, but they reflect a deeper process in which the body's systems are gradually being pushed out of balance. Even before someone develops diabetes or has a heart attack, these metabolic disturbances can already be setting the stage for structural and functional damage across multiple organs [1].

Cardiometabolic disease is a broad term for health conditions that often occur together and affect the heart, blood vessels, and the body's metabolic systems. It includes problems such as heart attacks, strokes, type 2 diabetes, chronic kidney disease, and non-alcoholic fatty liver disease, all of which share common roots like insulin resistance, inflammation, and unhealthy fat distribution [2]. Metabolic syndrome describes a cluster of related issues: high blood pressure, high blood sugar, excess abdominal fat, and abnormal cholesterol or triglyceride levels that raise the risk of these serious diseases. Having three or more of these factors meets the definition of metabolic syndrome, but even one can increase long-term health risks [3].

Multiple organ dysfunction syndrome is when two or more organs can't keep up with the body's needs, and the body begins to shut down. Because different organs can fail at the same time, symptoms vary breathing problems, confusion, low blood pressure, or reduced urine output are common examples. It requires urgent medical care and often life-support measures to stabilize the person [4]. These conditions together show how metabolic problems can quietly begin to affect several organs long before any clear symptoms appear. This highlights why it is so important to identify early multisystem organ damage in adults who already have metabolic abnormalities [5].

Goal

The main goal of this study is to analyze instrumental and laboratory changes of the patients with arterial hypertension.

Material and methods of research

This study was carried out using clinical records from 41 adults with arterial hypertension with a mean age of 64, who had undergone a wide range of routine medical investigations such as blood tests, biochemical panels, lipid profiles, fasting glucose, inflammatory markers, and coagulation studies, along with repeated urine examinations. To evaluate organ health, imaging procedures such as abdominal and renal ultrasound, echocardiography, chest X-rays, and, when needed, gastrointestinal endoscopy or prostate and bladder ultrasound were reviewed. For each individual, the most recent laboratory findings were selected and organized into two main categories: metabolic abnormalities and organ-specific changes. These findings were then summarized into two tables. Table 1 one describing the prevalence of metabolic abnormalities and Table 2 outlining the pattern of early organ involvement in multi-system to explore how metabolic changes may relate to early multisystem organ damage.

The results of the research and their discussion

This table 1 shows a clear pattern of early metabolic strain, with all 41 patients already experiencing hypertension. Lipid disturbances are also widespread: 21 have elevated Low-Density Lipoprotein (LDL), 16 have high total cholesterol, 15 have low High-Density Lipoprotein (HDL) and 10 have elevated triglycerides. Signs of impaired glucose handling appear in 15 patients, while 8 also show raised liver enzymes Alanine Transaminase (ALT) and Asparate Transaminase (AST), 12 have elevated creatinine, and 5 show increased C-Reactive Protein (CRP), pointing to low-grade inflammation. Only 4 patients meet criteria for obesity, which suggests that these metabolic abnormalities are not simply tied to body weight but reflect a broader pattern of physiological stress affecting multiple organ systems at an early stage.

Table 1 – Prevalence of metabolic abnormalities

Metabolic parameters	Number of patients affected	Prevalence %
Elevated total cholesterol	16	39
Elevated LDL	21	51.2
Low HDL	15	36.5
Elevated triglycerides	10	24.3
Impaired fasting glucose	15	36.5
Elevated creatinine	12	29.2
Elevated ALT/AST	8	19.5
Elevated CRP	5	12.1
Obesity (BMI>30)	4	9.8
Hypertension	41	100

The table 2 shows that early organ changes are very common in this group, and the numbers make the pattern easy to see. Heart findings are the most frequent, appearing in 36 of 41 patients (87.8%), with mild valve regurgitation and subtle structural variations that often accompany hypertension and dyslipidemia. Liver involvement come next, affecting 32 patients (78%), mostly as increased echogenicity and diffuse fatty-type changes typical early signs of metabolic stress. Kidney abnormalities are also widespread, seen in 31 patients (75.6%), including pyelocaliectasia, uneven contours, and simple cysts, all of which can reflect early nephropathy. Pancreatic changes appear in 26 patients (63.4%), usually as increased echogenicity or chronic parenchymal-type alterations. Gastrointestinal shows changes in 17 patients (41.4%), mostly gastropathy or duodenopathy. The urinary tract findings are less common but still present in 14 patients (34.1%), mainly bladder or urethral wall thickening, suggesting chronic low-grade inflammation. Altogether, these numbers show that metabolic abnormalities are closely linked with early, multi-organ structural changes, even before severe disease develops.

Table 2 – Prevalence of early organ involvement across multiple systems

Organ system	Number of patients (41)	Prevalence (%)	Most common findings
Liver	32	78	Steatosis in ultrasound
Pancreas	26	63.4	Increased echogenicity, chronic pancreatitic-type changes, Lipomatosis in ultrasound
Kidneys	31	75.6	Pyeloectasia, uneven contours, renal cysts, Nephroangiosclerosis
Heart	36	87.8	Mild valve regurgitation structural variations, abnormalities of valve
Urinary Tract (UT)	14	34.1	Leukocyturia, urinary valve abnormalities, calcification, inflammatory changes in UT, bladder wall thickening
GI Tract	17	41.4	Gastropathy, Duodenopathy, Fibrogastroduodenopathy

Conclusions

Taken together, these findings show that metabolic abnormalities in adults are not isolated laboratory issues but early warning signs. Even though only a small number of individuals are classified as obese, many already show hypertension, dyslipidemia, impaired glucose handling, and biochemical markers of inflammation or organ strain. When these metabolic shifts are viewed alongside the structural changes seen on imaging such as liver involvement in (32) patients, heart findings in (36), kidney abnormalities in (31), and additional changes across the urinary tract (14), pancreas (26), and gastrointestinal tract (17) a clear pattern emerges. Metabolic disruption appears to set off a cascade of subtle but measurable alterations across multiple organs long before advanced disease becomes clinically obvious. This close alignment between metabolic markers and early organ changes strongly supports the idea that metabolic abnormalities in adults are closely linked to early multi-system organ damage. Seeing these early signals lets us act while the body is still adaptable, not after damage has already settled in. It opens the door to screening sooner, when small changes are easier to reverse. It encourages looking at the whole person, not just one lab value or one organ at a time.

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AWARENESS AND KNOWLEDGE OF PROSTATE CANCER AND SCREENING PRACTICES AMONG MEN: A CROSS-SECTIONAL SURVEY

Introduction

Prostate cancer is one of the most commonly diagnosed malignancies in men worldwide and a major cause of cancer-related morbidity and mortality. Globally, over 1.4 million new cases are reported annually, with more than 375,000 deaths attributed to the disease, making it the second most common cancer in men (WHO, 2022) [1]. The risk increases sharply after age 50, with family history, genetic mutations (e.g., BRCA1/2), high-fat diet, smoking, and obesity contributing to its development.

Early detection significantly improves prognosis. Screening methods such as prostate-specific antigen (PSA) blood testing, digital rectal examination (DRE), and biopsy are widely recommended.