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CONTENTS

LIST OF ABBREVIATIONS

ABB	Acid-base balance
ADH	Alcohol dehydrogenase
AG	Anion gap
AGAT	L-arginine:glycine amidinotransferase
Ald	Aldolase
ALP	Alkaline phosphatase
ALT	Alanine aminotransferase
Am	α-Amylase
AP	Acid phosphatase
APTT	Activated partial thromboplastin time
ART	Activated recalcification time
AST	Aspartate aminotransferase
BBB	Blood-brain barrier
BCHE	Pseudocholinesterase
BE	Base excess
CEA	Carcinoembryonic antigen
ChE	Cholinesterase
CM	Chylomicrons
Cp	Ceruloplasmin
CPK	Creatine phosphokinase
CRP	C-reactive protein
Ct	Catalase
DAO	Diamine oxidase

DIC	Disseminated intravascular coagulation
DOC	11-deoxycorticosterone
DOPA	Dihydroxyphenylalanine
EAC	Effective albumin concentration
ECG	Electrocardiogram
ESR	Erythrocyte sedimentation rate
FDP	Fibrin degradation product
FSH	Follicle-stimulating hormone
G6PD	Glucose-6-phosphate dehydrogenase
GGT	Gamma-glutamyl transpeptidase
GH-RH	Growth hormone-releasing hormone
GIH	Gastrointestinal hormone
GIP	Gastric inhibitory polypeptide
GLDH	Glutamate dehydrogenase
β-GN	B-glucuronidase
GPx	Glutathione peroxidase
GR	Glutathione reductase
HCG	Human chorionic gonadotropin
11-HCS	11-hydroxycorticosteroids
17-HCS	17-hydroxycorticosteroids
HDL	High density lipoproteins
5-HIAA	5-hydroxyindoleacetic acid
HK	Hexokinase
ID	Iditol dehydrogenase
IDH	Isocitrate dehydrogenase
IDL	Intermediate density lipoproteins
LAP	Leucyl aminopeptidase
LDH	Lactate dehydrogenase
LDL	Low density lipoproteins

LH	Luteinizing hormone
Lp	Lipase
MDA	Malonic dialdehyde
MDH	Malate dehydrogenase
MMWS	Middle molecular weight substances
NSE	Neuron-specific enolase
PAs	Polyamines
α2-PAG	Pregnancy-associated α2-glycoprotein
PAPPA	Pregnancy-associated plasma protein A
PFF	Protein factor of fertility
PK	Pyruvate kinase
PSA	Prostate-specific antigen
PTH	Parathyroid hormone
PTT	Partial thromboplastin time
SOD	Superoxide dismutase
SQR	Succinate dehydrogenase
TAC	Total albumin concentration
TBG	Thyroxin-binding globulin
TI	Toxicity index
TIBC	Total iron-binding capacity
Tk	Transketolase
TPA	Tissue polypeptide antigen
TPBG	Trophoblast glycoprotein
TRH	Thyrotropin-releasing hormone
TSH	Thyroid-stimulating hormone
UIBC	Unsaturated iron-binding capacity
VIP	Vasoactive intestinal polypeptide
VLDL	Very low density lipoproteins

PREFACE

Nowadays numerous modern monitoring and marker parameters of the functional state of the body and general homeostatic functions have appeared. The use of a wide range of new monitoring indices and markers with diagnostic and prognostic purposes requires analytical substantiation and compilation of them in disorders of metabolism and energy supply that may accompany the development of various diseases and pathological conditions.

However, comprehensive analytical multisystem evaluation of disorders of homeostatic functions in various diseases and pathological conditions, using monitoring, metabolic parameters of the whole organism, organs, systems, and functions, has not yet been elaborated. This fact contributes to the appearance of this analytical manual that includes the use of scientifically based monitoring and marker indices for diagnosing disorders and pathological conditions of protein, lipid, carbohydrate, mineral, nucleic acid, water and salt, hormonal and pigment metabolism, acid-base balance, hemostasis, tumor and pregnancy markers, and enzymatic systems. This manual provides readers with information about reference ranges of marker and monitoring indices in blood, urine, cerebrospinal fluid, their elevation or reduction in case of one or the other disease and pathological condition of somatic, infectious, or genetic etiology. Informative metabolic and clinical parameters that are the most widely used for evaluating homeostatic functions in diseases of the cardiovascular, nervous, respiratory, digestive, urinary, endocrine, and reproductive systems, as well as blood, various organs and tissues from different sources have been analyzed and systematized. This manual provides analytical data about the 92 most common among the population diseases and pathological conditions with substantiated metabolic monitoring combinations of parameters, which can be used to make a diagnosis and monitor the efficacy of treatment.

This analytical manual aims to help medical students, post-graduate students, researchers, and physicians to get information about monitoring parameters and markers in various diseases and pathological conditions: cardiovascular, nervous, respiratory, digestive, neuroendocrine, urinary, and reproductive systems, as well as disorders of protein, carbohydrate, lipid, water and salt, hormonal metabolism and metabolism of macro- and microelements, enzymes, pigments, dysfunctions of hemostasis and acid-base balance. It may also help to rapidly determine metabolic and clinical combinations of criterion-important parameters to diagnose and monitor the efficacy of treatment.

Prof. Zhukov Victor Ivanovich

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