

ApoB in Clinical Care

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Cover and layout design: www.designworks.nl.eu

ISBN 978 90 368 0979 5

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ApoB

IN CLINICAL CARE

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Foreword

This book was written for doctors who want to move forward, who want to give better care to their patients, and who are willing to learn how to do that. Accurate diagnosis is a core principle of clinical medicine but if only the conventional plasma and lipoprotein lipids are measured, accurate diagnosis of the atherogenic disorders of lipoprotein metabolism is not possible. Everything is reduced to one of three diagnoses: hypercholesterolemia, hypertriglyceridemia or mixed hypercholesterolemia and hypertriglyceridemia.

However, with measurement of total cholesterol, triglyceride and apoB and application of the apoB algorithm, with the exception of Lp(a), which requires a specific assay, accurate diagnosis of the apoB dyslipoproteinemias is now simple and fast.

Accurate diagnosis is the indispensable key to effective therapy for the individual patient and, as we demonstrate in this book, this principle certainly holds for the dyslipoproteinemias. Adding apoB to total cholesterol and triglyceride moves us from lipids to lipoprotein particles, from dyslipidemias to dyslipoproteinemias, from guessing what may be wrong to knowing what is wrong, from guessing what treatment should be best, to knowing which treatment is best, from just mindlessly following rules that others make, to understanding what to do and why you should do it.

With the apoB app, which is available for free in both the Apple App Store and Google Play Store, diagnosis takes only seconds and core material is immediately available. In this book, we integrate the relevant physiology, epidemiology and clinical trial results so that you can have a real understanding of how this new diagnostic and therapeutic approach works.

Cardiovascular disease is the commonest cause of death worldwide. Effective therapies are available but they need to be given to those who need them when the problem is recognized not after the complication has occurred.

This task has not been easy. Nothing worthwhile is. But without all the assistance we have received, we would not have come this far. Accordingly, we wish to thank all our colleagues who have encouraged us as well as our critics who have stimulated us. But,

most of all, we want to record our infinite thanks and love for those who have believed in us and what we are trying to do, those who have supported us and loved us in all our moments of darkness, moments that seemed to stretch into eternity. They are the light that has kept us going.

This effort is imperfect. We acknowledge that. But we believe it is a step forward and forward is where we need to go if we are to improve the outcomes of our patients.

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All the illustrations in this book were created by David Rolling.
The authors are so grateful to him.
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List of abbreviations

ACAT	Acyl-CoA Cholesterol Acyltransferase
ALP	Atherogenic Lipoprotein Phenotype
apo	apolipoprotein
ASP	Acylation Stimulating Protein
ATPII	Adult Treatment Panel II
ARH	Autosomal Recessive Hypercholesterolemia
CAD	Coronary Artery Disease
CAPD	Continuous Ambulatory Peritoneal Dialysis
CETP	Cholesterol Ester Transfer Protein
CHD	Coronary Heart Disease
CR	Chylomicron Remnants
CTT	Cholesterol Treatment Trialists
CVD	Cardiovascular Disease
DM2	Type 2 Diabetes Mellitus
ERFC	Emerging Risk Factors Collaboration
ESRD	End-Stage Renal Disease
FA	Fatty Acids
FDB	Familial Defective ApoB100
FH	Familial Hypercholesterolemia
FCH	Familial Combined Hyperlipidemia
FDBL	Familial Dysbetalipoproteinemia
FHTG	Familial Hypertriglyceridemia
GPI	Glycophosphatidylinositol
HAART	Highly Active Antiretroviral Therapy
HDL-C	High Density Lipoprotein Cholesterol
HeFH	Heterozygous Familial Hypercholesterolemia
HIV	Human Immunodeficiency Virus
HoFH	Homozygous Familial Hypercholesterolemia
HPS	Heart Protection Study

HR	Hazard Ratio
HSP	Hormone Sensitive Lipase
IDL	Intermediate Density Lipoprotein
JBS	Joint British Societies
LCAT	Lecithin-Cholesterol Acyltransferase
LDL-C	Low Density Lipoprotein Cholesterol
LDL-P	Low Density Lipoprotein particle number
Lp(a)	Lipoprotein(a)
LPL	Lipoprotein Lipase
LRP	LDL-Receptor Related Protein
MTP	Microsomal Triglyceride Transfer Protein
NHANES	National Health and Nutrition Examination Survey
PCOS	Polycystic Ovary Syndrome
PCSK9	Proprotein Convertase Subtilisin Kexin Type 9
PUFA	Polyunsaturated Fatty Acids
RCT	Randomized Clinical Trial
RER	Rough endoplasmic reticulum
SER	Smooth endoplasmic reticulum
SLE	Systemic Lupus Erythematosus
SREBP	Sterol Regulatory Element Binding Protein
TC	Total Cholesterol
TG	Triglycerides
TSH	Thyroid-Stimulating Hormone
USF1	Upstream Stimulatory Factor 1
VLDL	Very Low Density Lipoprotein

Conversion of mmol/l to mg/dl

Cholesterol and triglyceride concentrations in mmol/l are converted to mg/dl by multiplying by 38.5 and 88.5, respectively.