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# Organic Nitrates

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With 51 Figures



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## Preface

Nitroglycerin and other organic nitrates have been used for over a century in the treatment of angina pectoris. Millions of patients, throughout the world, have placed nitroglycerin tablets under the tongue and have experienced rapid and dramatic relief from the chest pain that frequently occurs as a manifestation of disease of the coronary arteries. The empirical observation of the safe use of nitrates for the alleviation of the symptoms of angina have led to their widespread medical acceptance. The use of organic nitrates preceded any knowledge of their mechanism of action or their ultimate metabolic fate. Thus, more simply stated, although sublingual nitrates helped the patients, little was known concerning what these drugs do to the body or what the body does to the drugs.

A substantial number of investigators have focused on these questions especially during the last two decades. We now have considerably more insight into the pathways of degradation of organic nitrates and the relationship of the metabolic processes to the biological action of these agents. Similarly, considerable effort has been expended in understanding the mechanism of action of these agents directly on vascular smooth muscle and on cardiac work and performance. Finally, there is a more substantive understanding of the physiology of the coronary circulation as well as the pathophysiologic manifestations of myocardial disease. The above advances will be reviewed in this text; however, a number of questions concerning (a) the mechanism of action, (b) the effectiveness of these agents by various routes of administration, and (c) their utility as prophylactic agents, remain to be resolved completely.

The present volume was written by a number of highly competent scientists and clinicians who are intimately involved in investigations of the basic mechanisms of action and the therapeutic utility of organic nitrates. The monograph is designed to give an over-view, as well as considerable detail concerning and exhaustive referencing of the investigational status of research in the area of organic nitrates. The chapter contributions primarily reflect the viewpoints of the authors and editing was limited, with a view to achieving continuity and avoiding unnecessary overlap. Differences in opinion have not been omitted and in certain areas different approaches to the same subject seemed worthwhile and were left intact. The pathophysiology of angina pectoris and the clinical pharmacology and therapeutic application of organic nitrates can be found in several portions of the text. Indeed, the current surge of clinical interest in the intravenous administration of nitro-

glycerin in the treatment of myocardial infarction is detailed and supported by the work of several of the chapter contributors.

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St. Louis, Winter 1974/75

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