

Anne Lynn S. Chang
Editor

Advances in Geriatric Dermatology

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This book is dedicated to my colleagues who have a shared interest in medical issues of aging skin. Without their support, enthusiasm, dialogue, and thoughtful input, this work would not be possible.

Preface

This book is intended to synthesize current medical literature on critical topics in geriatric dermatology, a field that is likely to become more important as longevity in much of the world population increases. Historically, much of the field of skin aging has focused on aesthetics, but my career goal is to try to bridge the divide between the cosmetic aspects of skin aging and the very real medical issues of aging skin. Hopefully, this book will inspire other dermatologists as well as other physicians, researchers, and students to recognize the importance of medical issues of aging as it pertains to the skin. The ultimate goal is to spark research into these issues and narrow gaps in geriatric dermatology knowledge to improve patient care.

Redwood City, CA, USA

Anne Lynn S. Chang, MD

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Dermato-pharmacology in Older Patients

Olivia Yu-Ping Lai and Justin Endo

Physiologic Principles of Geropharmacology

Providers who treat older adult dermatology patients may hold preconceived notions—whether positive or negative—about the aging process and providing caring for this population. However, if one thinks of the characteristics of various older adult dermatology patients, a diversity of aging is likely to be found. The 90-year-old healthy, community-dwelling great-grandmother requesting a general skin check and refill of topical rosacea medications will be approached differently than the 70-year-old frail, institutionalized male with a non-operable basal cell carcinoma, unintentional weight loss, low performance status, poorly controlled psoriasis, and infected decubitus ulcers wishing to have aggressive therapy for all his conditions.

Aging is a heterogeneous process that results from an accumulation of both natural cellular

senescence (i.e., “healthy” or intrinsic aging) and external factors (e.g., comorbid conditions, lifestyle, medications, environmental exposures) [1, 2]. As a result, older adults metabolize and respond differently to medications than younger adults. This fact might account for why older adults are four times more likely to be hospitalized for untoward drug events, over two-thirds of which are probably preventable [3]. Furthermore, it might not be possible to predict based solely on age how geriatric patients will respond to drugs. Age-related physiologic changes that are germane to the prescribing practitioner, or “geropharmacology,” are highlighted, and the discussion focuses on pharmacokinetic (i.e., absorption, distribution, metabolism, and elimination of medications) and pharmacodynamic changes (i.e., the physiological effects of medications) [4]. In a later section, practical correlates of these geropharmacologic principles are demonstrated through common examples.

Pharmacokinetics of Aging

Medication Absorption

The two primary routes of dermatologic medication absorption are oral and topical. In healthy older adults, gastrointestinal (GI) and transdermal absorption do not appear to be significantly decreased compared to younger patients, despite changes in GI motility and age-related epidermal atrophy, respectively [5, 6]. Obviously, some older patients might have other comorbidities

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