
This monograph is a comprehensive overview of the latest developments in salivary research by some of the leading global experts in the field. The content has been aptly classified into three sections dealing with anatomy and physiology, salivary functions, and diagnostics and disorders.

Chapter one discusses the anatomy and biogenesis of the major human salivary glands and the mouse submandibular salivary gland, which is used extensively as a research model. It includes a comprehensive review of recent research on the identification and function of stem cells in salivary glands, and the emerging field of research suggesting that nerves play an instructive role during development and may be essential for adult gland repair and regeneration. The authors provide an overview of the general approaches currently being developed to regenerate damaged salivary gland tissue including gene therapy, stem cell-based therapy and tissue engineering.

The second chapter deals with the mechanism of salivary secretion and its neural regulation. It reviews the recent advances in the understanding of membrane transport proteins involved in intracellular calcium signalling in the salivary acinar cells in response to nerve stimulation and the ion transport proteins responsible for the secretion of saliva by the acinar cells. Salivary glands retain their ability to regenerate following extreme atrophy, and autonomic nerves have an important role in both gland development and maintenance of long-term normal function. Increased understanding of the trophic influences of autonomic nerve signalling should benefit the development of therapeutic approaches to glandular regeneration. The chapter on salivary pellicles deals with their function, formation, composition and stability. The review of this booming area of research using experimental techniques, hitherto reserved for more traditional surface science studies, is comprehensive and enlightening towards future directions of research.

The chapter on antimicrobial defense systems in saliva discusses the various mechanisms by which the composition of the oral microflora is modulated. Saliva promotes the complexity of the oral microflora, which in itself protects against overgrowth by a few pathogenic species. It also harbours a large panel of antimicrobial proteins which directly and indirectly inhibit uncontrolled outgrowth of bacteria. The next chapter on saliva and wound healing discusses its role in faster healing of oral wounds. Saliva contains several proteins which play a role in different phases of wound healing. The role of tissue factor, epidermal growth factor, secretory tissue leukocyte protease inhibitor and histatins have been dealt with in brief.

Role of saliva in oral food perception is principally focussed on chemosensory perception. This includes protection of taste buds, salivary hormones involved in chemosensory perception, role of flow rates and electrolytes, interaction between saliva and organic compounds, and taste and aroma molecules. The varying relationships observed between saliva composition and sensory perception show that saliva is key to explaining the differences in food perception, acceptability and behaviour seen in the population. The development of proteomics and metabolomics appears promising. Saliva is capable of decreasing friction force by at least two orders of magnitude when in between hydrophobic surfaces. This ability to lubricate is the key to oral health, food processing and taste perception. The chapter on lubrication reviews...
different mechanisms of saliva lubrication and their interaction is demonstrated using a simple physical framework. The current understanding of the roles of the molecular structure and physicochemical properties of major salivary protein complexes on lubrication is summarized and critically evaluated.

The chapter on salivary diagnostics presents an overview of biomarker development and the multitude of techniques utilized in identifying saliva-based molecular indicators of disease. The authors present oral fluids as an easily accessible non invasive alternative to traditional diagnostic avenues and not just an essential component of the digestive process. Recent advancements in the field of molecular diagnostics reveal that saliva may contain real-time information regarding our overall physiological condition.

The chapter on the use of saliva markers in psychobiology discusses the greatly expanded and wide range of salivary biochemical parameters. The first part on “Mechanisms” discusses the main determinants of the saliva/plasma ratio (SPR): the mechanism by which plasma constituents enter saliva, i.e., passive diffusion, active transport, ultrafiltration, leakage, and associated physiochemical factors. The second part, on “Methods” provides an overview of central and peripheral neural mechanisms that regulate salivary gland function and release of glandular proteins. This provides a neurobiological underpinning for a section which addresses methodological implications for the assessment of glandular secretions. Salivary psychobiology is a fast-growing field and more rigorous studies are required for this discipline to reach its full potential.

A chapter dedicated to xerostomia deals with its primary causes Sjögren’s syndrome, medication and radiotherapy of the head and neck. It also discusses the agents for prevention of xerostomia or restoration of lubrication. The next chapter on drooling comprehensively discusses the salivation and swallowing mechanisms and prevalence, causes, pathophysiology, clinical manifestations and management of drooling. The last chapter discusses the three most frequently diagnosed salivary gland diseases: infections, sialolithiasis and mucoceles. The authors reiterate that the aetiology of these three pathological entities can be obscure or multifactorial and the clinical features alarming and occasionally straddling.

Overall, this book will be useful not only for basic scientists working in the field of oral biology, but also for dental students, dentists and health professionals interested in exploring one of the most underestimated bodily fluids.

Mahesh Verma
Maulana Azad Institute of Dental Sciences, MAMC Complex, Bahadur Shah Zafar Marg
New Delhi 110 002, India
dpmaids@gmail.com


Skin disorders in patients with internal malignancy are usually of interest to dermatology departments affiliated to oncology centers. This book focuses on this small subset of patients who are exposed to anticancer drugs or therapy. The vast experience of the authors of oncology centres the world over has been collated.

The book is well organized into six sections. The first section prepares the readers by detailing the basic considerations in dermatology and medical oncology. A chapter dedicated to grading system for adverse reactions to anticancer drugs emphasizes the importance given by oncologists to such reactions in prognosticating and the important role played by dermatologists in their management. The second section, albeit brief, describes paraneoplastic dermatologic disorders with classical illustrations. The third section deals elaborately with miscellaneous skin and mucosal affections in cancer patients and has lucid chapters covering subjects as varied as radiation mucositis and generalized pruritus.

The fourth section is the real strength of the book and relates to side effects of chemotherapeutic agents. In recent times, there has been an exponential growth in the number of anticancer drugs in use and some of these induce rashes that require dermatologists to be familiar with them. These side effects have been detailed according to the pharmacological category of anticancer agents and are supported by representative illustrations.

A separate section elaborates the late coetaneous complications of cancer therapy. The last section is dedicated to day to day management of cancer patients by dermatologists and gives well designed algorithms.
BOOK REVIEWS

Price: US $ 209.00 / CHF 178.00
ISBN 978-3-318-02458-6

Acute cerebrovascular syndrome (ACVS) encompasses both transient ischaemic attacks (TIAs) and acute ischaemic stroke (AIS), akin to the concept of acute coronary syndrome (ACS) which includes both unstable angina and acute myocardial infarction. This book showcases this concept in great detail and with evidence. TIA is generally not accorded the same kind of importance or adequacy of response or evaluation on account of the “transiency” of the clinical features and “normal” patient on examination. This is most unfortunate as TIA singularly is one of the most powerful “warning” features for patients and clinicians to avert the impending stroke which can be a major disaster.

Chapter 1 presents the saga on TIAs with a scintillating journey through the historical aspects of the nomenclature and evolving definitions of the term TIA. The second chapter describes in detail the novel and emerging concept of ACVS. Based on data from international registries and analysis of data from patients with TIA who underwent radiological investigations, it has been observed that TIA and AIS are on the same spectrum of acute ischaemic syndrome in the central nervous system (CNS). Unlike ACS, the mechanism of ACVS is complex and protean and there are no measurable biomarkers for ACVS unlike ACS. Thus, the identification and management of ACVS become more complicated than ACS. There is also emphasis on the dynamic nature of the neuroimaging findings in TIA. Distribution of the findings is continuous and magnetic resonance imaging (MRI) positivity is influenced by the timings of imaging. MRI positivity should be used as a high risk marker for subsequent stroke and not for differentiation of TIA from AIS.

The next chapter is on TIA as a medical emergency. On account of the multiple mechanisms leading to TIA, the prompt subtyping of ischaemic stroke using standard protocols and multifaceted prophylactic interventions are mandatory to prevent subsequent stroke. To prevent subsequent stroke arising from TIA, antiplatelet and anticoagulant therapies should be started immediately along with comprehensive management of lifestyle, vascular risk factor control and when indicated, carotid endarterectomy (CEA) or carotid angioplasty stenting (CAS) for significant stenosis of ICA.

The concept of TIA clinics, their relevance in stroke prevention has been discussed in the fourth chapter. The high risk of imminent stroke following TIA can be decreased by nearly 80 per cent, if patients are immediately triaged, investigated and managed by stroke specialists after TIA. This sense of urgency when a patient has already improved and presents with no deficit, needs to be inculcated, instilled and ingrained amongst both the public and the first contact physicians in medical practice. Management of these patients in emergency requires well-organized dedicated health care systems such as TIA clinics. This approach has already proven to be safe and cost-effective avoiding full hospitalization in most cases.

The next chapter discusses the risk scoring for TIA. Earlier scores such as ABCD2 and newer modifications and refinements such as ABCD3I, ASPIRE, ABCDEF have been described. The main refinements in these scoring systems were to include imaging results such as DWI positivity or aetiologic considerations such as carotid artery stenosis or atrial fibrillation. Since these new scores necessitate an extensive diagnostic workup, these would be feasible in only large comprehensive stroke centres. Universally, across different clinical practice settings, it is ABCD 2 score which is the simplest and recommended in several guidelines.

Chapter 5 gives a comprehensive picture on the epidemiology of TIA. What is available so far in published literature has been succinctly presented. The
need for further clarity on various epidemiological aspects of TIA has also been expounded.

The clinical features of presentation, recognition and diagnosis have been described in the next chapter. It is logical to assume that the clinical presentation (symptoms and signs) will be very similar to that of AIS, albeit in much less duration of occurrence. The pattern of presentation and duration of symptoms may be essential for prediction of recurrence, subtype and prognostication. Besides the usual and well recognized features, the unusual and uncommon symptoms have also been described.

The guidelines for the management of patients with TIA have been dealt with in great detail in the following chapter. Emphasis has been laid on the similarity in most aspects of the paradigm of management protocols of TIA and IAS, reiterating the concept of ACVS.

Radiological examination of TIA has been given an independent emphasis in the next chapter. Neuroimaging remains critical in evaluation of patients with TIA. The feasibility, cost-effectiveness, affordability, availability of CT and MRI based protocols for acute stroke multimodal imaging have been well analyzed.

Neurosonology using ultrasound and transcranial Doppler technique is fast emerging to be a prompt, bedside, neurological practice which akin to electrophysiology, has the potential to become an extension of bedside neurological examination in diagnosis, management and prognostication of stroke patients. Various established and potential applications of ultrasonography in patients with cerebrovascular ischaemia have been described in chapter 10.

Stroke subtypes and intervention studies for TIA have been enunciated in the following chapter, which essentially deals with cardioembolic source for TIAs. The last chapter expounds the available evidence and emergence of dual antiplatelet therapy for TIA patients besides describing the evolution of antiplatelet regimes from inception to newer drugs in the market. Anticoagulation for atrial fibrillation (AF) including the newer anticoagulants (NOAC) have been well analyzed. The various specific clinical aspects such as “when to switch” and “when to stop” NOAC have been dealt with.

Overall, the book has concise and succinct information narrated with clarity and conviction, and provides valuable information for neurologists, neurosurgeons and those involved in clinical research.

M. V. Padma Srivastava
Department of Neurology
Neurosciences Centre
All India Institute of Medical Sciences
New Delhi 110 029, India
vasanthapadma123@gmail.com