
Glass-Ionomers in Dentistry

Sharanbir K. Sidhu
Editor

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 Springer

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Foreword

I welcome the publication of a book which sets out to establish the current status and future prospects for the development of an important group of materials. Dr Alan Wilson, who is considered the father of glass-ionomer chemistry, would have been delighted that a group of materials based on his original ideas back in the 1970s had come to such prominence. Acknowledgement of the work of Dr Denis Smith in identifying the potential of polycarboxylate-based materials in dentistry also needs to be made. The initial limitations of glass-ionomers which restricted their clinical use have been addressed by various additions and modifications over many years. This has led to some confusion amongst dentists and researchers who have quite rightly asked the question – ‘when is a glass-ionomer not a glass-ionomer?’ Even ISO standards which set out to define composition and minimum performance requirements for materials remain somewhat equivocal on this subject.

The group of authors, brought together from the UK and Australia/New Zealand, not forgetting a key contribution from Malta, have tried to address the confusion in a logical way. They represent all stakeholders, including manufacturers, materials scientists, academic clinicians and general practitioners. Overall, it is a useful addition to the bookshelves of all interested parties.

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Preface

As editor of this monograph, I am grateful to the distinguished colleagues who so willingly gave up their time to contribute to it with their expertise. It would not have been possible without their passion and hard work in sharing their knowledge. I am also grateful to several individuals notably Professors Timothy F Watson, John F McCabe and Martin J Tyas, as well as Dr Graham J Mount, who have been so inspirational and provided me with much-valued mentorship in glass-ionomer cements over the years. I would also like to thank my family for the forbearance and support in my endeavours.

This monograph was inspired by the continuing and new roles of glass-ionomer cement materials in restorative dentistry. The indications for their use have extended over the years and now cover a wide range from lining, bonding, sealing, luting or restoring a tooth, as well as assisting in healing and hypersensitivity. Of particular interest, these materials have paved the way to new and modified approaches to dealing with established and early caries. Modern-day glass-ionomers are considered as bioactive adhesive restorative materials that release ions that can play a part in remineralization or healing of tooth structure. They now have specific or niche roles in clinical techniques such as minimally invasive approaches.

The monograph is somewhat deliberately structured to commence with the first chapter providing a rare historical perspective regarding the discoveries in the laboratory in London that led to the invention of glass-ionomer cements. This forms the basis for an introduction to the subject matter and is followed by chapters dealing mainly with clinical aspects. The next chapters focus on the nature of these materials, how they perform clinically as well as the benefits and limitations of their use. The shift in emphasis from a purely restorative to a therapeutic role, in terms of the anticaries and remineralizing potential of glass-ionomer cements, is highlighted in the chapter on minimum intervention which also reflects their impact on the minimally invasive era. The next section continues with contemporary views on their use in endodontics and in paediatric dentistry. The final chapter discusses future avenues and developing technologies for further improvement of glass-ionomers. While it is impossible to cover every aspect of these materials, it is hoped that the contents are of interest to undergraduate and postgraduate students, a wide range of dental clinical professionals as well as researchers and scientists.

Although there is little doubt that more needs to be done before they reach their full potential, the future for this group of materials would appear relatively promising.

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