

病毒性肝病研究进展

RESEARCH ADVANCES
IN VIRAL LIVER DISEASES

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序

《病毒性肝病研究进展》一书的作者都是近年来活跃在病毒性肝病研究领域的青年科学工作者，他们在攻读硕士、博士学位期间，受到我国许多著名肝病学家的培养和指导，而今仍奋战在病毒性肝病研究领域的前沿阵地。他们经过半年多时间的努力，撰写了这本著作，该书共收录 22 个专题，内容包括病毒性肝病的病原学、流行病学、分子生物学和临床治疗等方面，还涉及到卫生决策、卫生经济等宏观分析法在病毒性肝病研究领域的应用。本书的出版对我国病毒性肝病的研究是一个贡献，该书对广大医务人员、高年级医学生、尤其对广大从事病毒性肝病研究的科研人员也不失为一本好的参考书。

由于本书为进展性著作，从征稿到出版全过程的时间仅半年左右，所以难免有不足之处，还望广大读者对书中的错误不吝批评指正。可喜的是本书的出版使我们看到我国病毒性肝病的研究事业后继有人，一大批青年肝病科技工作者在成长，对此，我们老一辈肝病工作者深感欣慰，作为历史的责任，我们要不断地为他们创造条件，悉心培养指导，使他们早日成为我国病毒性肝病研究领域的栋梁之材，我深信年轻一代病毒性肝病科技工作者会对我国病毒性肝病的研究和防治做出杰出的贡献。

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买 凯

1992.8.15.

PREFACE

The authors of this book "Research Advances in Viral Liver Diseases", are all young scholars who play an active role in the research field of viral liver diseases. They were trained and guided by many outstanding scientists and professors during their studies for the degree of master or doctor, and are still fighting at the front of the research field of viral liver diseases. For more than six months, great effort was made by them for this book which consist of twenty-two special topics. The contents include etiology, epidemiology, molecular biology, prevention and treatment of viral liver diseases, and involve the application of the health economy and decision-making in the research field of viral liver diseases. The publication of this book is a contribution to the study of viral liver diseases in China. The book is one of the good references for many medical workers and senior medical students, especially for those who are carrying out the researches of viral liver diseases.

Because this book is progressive in nature and it takes only six months for us to complete the process from soliciting contributions to the publication of the book, it is unavoidable that there may be some drawbacks in the book as one of reviews the recent developments of viral liver diseases. We hoped that the readers would be kind enough not to stint their comment and criticism. Nevertheless, we are delighted to see that large numbers of young scholars who devote themselves to the study of viral liv-

er diseases are becoming mature. We, as veteran scientists, have the responsibility of creating excellent research conditions for their work, guiding their study with much attention, bringing them into prominence earlier and becoming the pillars in the research field of viral liver diseases in China. I believe that the young scholars will certainly make significant accomplishments in the research and the prevention and treatment of viral liver diseases.

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August 15, 1992

前 言

病毒性肝病是一个发病率极高、对人类有着巨大危害的传染性疾病，它包括各型病毒性肝炎及与此相关的肝病如肝癌、肝硬化等，全世界有数以万计的科研人员从事着病毒性肝病方面的研究。通过二十余年的不懈探索，在病毒性肝病的病原学、流行病学、预防控制等方面已经取得了突破性的进展，乙肝疫苗的研制成功和大规模的人群使用，使人类最终控制乙型病毒性肝炎成为了可能。尤其近一两年来，病毒性肝病的研究更是突飞猛进，如丙型肝炎病毒和戊型肝炎病毒的基因克隆成功及诊断方面的进展，为丙型肝炎和戊型肝炎的防治奠定了基础，同时随着分子生物学技术（DNA 杂交、PCR 技术等）在病毒性肝病研究领域的广泛普及和应用，可以预见，病毒性肝病研究的前景必将是日新月异。

我们几位从事病毒性肝病研究的青年科技工作者在老一辈专家和青年同行的支持和鼓励下，邀请国内病毒性肝病研究领域二十余位中青年学者，编写了本书，全书包括 22 个专题，目的在于反映病毒性肝病的病原学、流行病学、诊断技术、预防、治疗等方面的最新研究成果和进展。内容涉及分子生物学和免疫学研究到卫生经济学、决策学分析等各个领域。在本书征稿过程中，我们得到了国内病毒性肝病研究领域许多中青年学者的广泛响应和支持，在此谨致谢意。本书录用的稿件是经编委会成员和有关专家审阅及讨论后选定的，部分稿件由于内容与本书宗旨不相符合，虽经作者反复修改，仍未能采用，恳请作者谅解。同时，鉴于本书属进展性书籍的特点，我们尽力将“征稿一定稿一出版”的周期缩短在半年之内，带之而来时间仓促的“后遗症”在所难免。

更需指出的是我们这些“初出茅庐”的学子，虽曾得到该研究领域专家、教授的指导，但冒昧完成这样的书籍，深有“超负荷”之感。在此，我们代表本书作者，恳切希望广大读者对书中的不足和错误之处给予指正。

河南医科大学买凯教授为本书作序，西安医科大学徐慧文教授审阅本书部分稿件并提出宝贵的修改意见，河南医科大学周元方教授和河南省微生物学会秘书长张金鉴高级实验师对本书的支持，河南医科大学外语教研室费敏教授对本书英文内容的审阅和修改，河南省科学院地理研究所张天桢研究员为本书出版所做的努力，河南省农牧厅王小琳同志整理抄写本书部分稿件，对每一位为本书出版做出贡献的同志，编者在此一并表示最衷心的感谢。

张建营 彭宣宪 张顺祥

1992.7.1.

FOREWORD

Recent advances in viral liver diseases(VLDs), which mainly include various types of viral hepatitis, cirrhosis and hepatocellular carcinoma, have made it even more essential to be familiar with the general features of viruses, the clinical manifestations and epidemiology. The VLDs, especially in China, are some of the most harmful diseases for people's health. Therefore, we invited some young specialists, who have been making research in VLDs in China, to focus on various aspects of the VLDs as distinct from the usual approach of emphasizing viral hepatitis. Our aim is to compile an up-to-date, practical and comprehensive book of the VLDs so that our Chinese colleagues in the field will find the book a useful adjunct to their studies.

In general, the book has not only dealt with hepatitis A, hepatitis B, hepatitis C, hepatitis D and hepatitis E, but also has some chapters on the techniques of molecular biology and immunology, which have made us have much significant progress in clinical diagnosis and treatment. This book also includes chapters about the health economy and decision-making which have never been stated in the previous books of this field in our country. In each chapter of the book, we have presented as possible. However, in reviewing the subjects, we do our best to avoid presenting our own opinions on the significance of the findings.

It is a pleasure to offer our sincere thanks to the contributors and the publisher for their efforts in making this book a fair re-

cord of the state of VLDs. We hope it will be of interest not only to the basic researchers in the general field of viral liver diseases, but also to the doctors engaged in clinical and preventive medicine in this field.

Zhang Jiangying, Peng Xuanxian, Zhang Shunxiang

July 1, 1992

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1.血清单项抗-HBs 阳性的研究意义

张建营

〔内容简介〕人体血清中自然存在的单项抗-HBs 阳性,是否具有保护作用,一直是国内外学者争论的问题。本文较为详细地概述了血清中自然存在的单项抗-HBs 的水平、维持时间、保护作用,以及对接种乙肝疫苗后的免疫应答。目前一致的观点认为,血清中自然存在的单项抗-HBs 阳性者,抗体维持时间较短,多数不具有保护作用,仅少部分人对接种乙肝疫苗产生回忆反应,多数人仍是 HBV 易感者,在制定乙肝疫苗接种方案时,对这部分人应给予足够重视。

在乙型肝炎的研究中,人们通常认为抗-HBs 是预防 HBV 感染的唯一保护性抗体,另一方面,人群免疫水平的确定以及乙肝疫苗接种后免疫效果的评价也常以此为指标,可是不断有学者报道,血清中含有较高水平抗-HBs 的人并不能防止以后 HBV 的感染^{〔1, 2〕},由此人们对血清中存在的单项抗-HBs 的免疫学、生物学特性及保护作用产生了怀疑。

一、单项抗-HBs 的水平及维持时间

有资料表明,在具有自然存在的单项抗-HBs 者中,抗

-HBs 水平通常都较低, 并且不能持续存在, 其中有 26% 的人不能被证明其存在的抗-HBs 具有免疫特异性, 即使在具有中等水平而持续存在有抗-HBs 的人中, 有一半以上对疫苗加强注射具有免疫反应, 但这与血清抗体阴性者中间所发生的原发性免疫反应不同^[3, 4]。Werner 报道, 在对单项抗-HBs 19 个月的观察期间有 47.8% (22/46) 的人失去了可检测水平的抗-HBs, 而这些失去抗-HBs 的人中间, 95.5% (21/22) 的人在观察开始时抗-HBs 水平都较低 (S/N 值 78)^[5]。笔者的研究发现, 在人群中进行 HBV 三项指标筛查时, 单项抗-HBs 阳性者约占整个 HBV 阳性者的 50% 左右, 而其中 S/N 值在 2.1—10.0 之间者又占单项抗-HBs 阳性者的 35% 左右。在一年的观察期间, 约有 55%—73% 的人抗-HBs 值降至 2.1 以下^[6, 7]。朱万兴对 102 例单项抗-HBs 阳性者进行了一年随访观察, 其中 53 例 (51.96%) 转阴, S/N < 20 者阴转率高达 85.71%^[8]。由此可见, 血清中存在的单项低水平抗-HBs 多数是不能稳定存在的。流行病学观察和实验室研究也表明, 血清中存在的单项抗-HBs 通常都处在 RIA 测定的临界水平 (S/N 值 2.1—10), 且不被加入到血清中的 HBsAg 所吸附, 维持时间也不超过一年^[9, 10, 11]。这种类型的抗-HBs 在 HBV 感染危险性较低的人群和高危险性人群一样常见, 而与从事有 HBV 感染危险性的职业时间长短无关^[11, 12]。显然, 不能把血清中存在的单项抗-HBs 解释为过去 HBV 感染或对 HBV 再感染具有免疫力的可靠指标。

二、单项抗-HBs 阳性的保护作用

一般认为, 抗-HBs 是预防 HBV 感染的保护性抗体, 其水平的高低及维持时间的长短是机体免疫水平的基础和关键。