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Home Dialysis in Japan

Contemporary Status.

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Preface

The *Overview of Regular Dialysis Treatment in Japan* showed that in 2010, approximately 300,000 people with end-stage renal disease (ESRD) required renal replacement therapy. More than 95% of these patients undergo in-center hemodialysis, which is typically delivered three times a week. Dialysis therapy was originally introduced to support ambulatory patients able to work and participate in social activities. However, in recent years a large component of the patients receiving dialysis therapy were diabetic and elderly, which caused a drastic change in dialysis therapy. The aim of dialysis therapy was altered to prolong life without consideration of quality of life. In Japan after World War II, westernization had a profound impact on the diet and lifestyle of the people. In this situation, some patients wished to have dialysis therapy (peritoneal dialysis (PD) and home hemodialysis HHD) at home based on individual preferences. Since dialysis therapy was introduced, machines and solutions used in dialysis therapy have been greatly improved in Japan, extending the lifespan of patients receiving dialysis therapy to two to three times longer than that of other countries. The ingenuity and creative energy of the Japanese for producing new machines and systems for patients receiving PD and HHD may contribute to new developments and progression of home dialysis therapy in the world.

This book is intended to acquaint the reader of the fruits of recent progress made in PD and HHD therapy in Japan.

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Introduction

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The Growing Burden of Dialysis Treatment in Japan and the United States: Is It Time for More Diversification to Home Treatment Modalities?

The growing number of dialysis patients in Japan and the USA has placed a growing strain on the healthcare budgets of both countries. In Japan, end-stage renal disease (ESRD) treatment accounts for 4.5% of the healthcare budget, a greater percentage than in the USA. The challenges for both countries center on the ever-expanding population with kidney failure, the improving survival of the prevalent population and the expanding expenditures for new treatments for anemia, bone and mineral disease, vascular disease and diabetes. In Japan, the prevalent dialysis population has reached 300,000 and in the USA 400,000, narrowing the gap between the two countries despite the major population differences. The longer survival of the general and dialysis populations in Japan has led to a rapidly growing prevalent population, which is now 75% the size of the treated US dialysis population.

Accompanying this growth is the substantial cost of treatment and its rate of growth over time. Since 1998–1999 the annual percent total growth in ESRD expenditure in the USA has averaged 8%, substantially higher than the overall inflation rate and higher than the overall Medicare general population expenditure growth rate (USRDS 2011 ADR, chapter 11, figure 11.4). The 8% growth is double the growth rate of the total population under treatment. Per person per year costs have increased 4–5% per year, which is mostly attributable to the cost of injectable medication and hospitalization due to infectious complication (USRDS 2011 ADR, chapter 11, figure 11.7). These realities led the US Congress to require Medicare to implement a new payment system which removes incentives for overprescribing medications, Quality Improvement Programs (QIPs) to address underutilization of services which may have an adverse impact on patient outcomes (Medicare Improvements for Patients and Providers Act of

2008 – MIPPA) and a rebasing of the payments to encourage the use of alternative home dialysis modalities. The new payment system fully bundles all dialysis services including intravenous (IV) medications such as ESAs, IV vitamin D, IV iron, IV carnitine and dialysis-related IV antibiotics, averaging the payments over peritoneal dialysis (PD) and hemodialysis (HD) populations. The PD population uses fewer injectable medications and has lower outpatient costs when compared to similar HD patients (USRDS 2011 ADR, chapter 11). The lower costs for PD create a financial incentive to use the home dialysis therapies in appropriate patients since the margins between payments and costs are greater in the PD verses the HD population. The new payment system was implemented January 1, 2011, and major changes have occurred in the use of dialysis modalities and reductions in the use of expensive medications.

Japan is facing similar realities, yet the vast majority of dialysis patients in Japan are treated with HD, a therapy which requires overhead costs for building dialysis centers, and investments in equipment with staffing by technicians, nurses, physicians and administrative personnel. Home dialysis therapies require less capital expenditures since the therapies are usually done by the patients or assistants in their own home setting. In the case of PD, the equipment costs are substantially lower than the cost of a HD machine. Newer equipment for daily home HD is also less expensive and less complicated, thereby making this therapy an alternative in appropriate candidates. In this series of articles on home dialysis therapies in Japan, the authors review the utilization of various home dialysis modalities and their experience with these therapies, providing a perspective on their applicability in Japan. These data will provide a perspective on alternative therapies that may be useful in Japan, which may inform medical practice and healthcare policy on the ESRD program and how it could change over time.

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