Proceedings of the Second International Symposium on Peritoneal Dialysis
Berlin (-West), June 16-19, 1981

ADVANCES IN PERITONEAL DIALYSIS

Editors: G. M. Gahl
M. Kessel
K. D. Nolph

Advances in peritoneal dialysis

Proceedings of the Second International Symposium on Peritoneal Dialysis Berlin (-West), June 16–19, 1981

Editors:

G.M. Gahl
M. Kessel
K.D. Nolph

1981

Excerpta Medica, Amsterdam – Oxford – Princeton

International Congress Series No. 567
ISBN Excerpta Medica 90 219 9537 9
ISBN Elsevier North-Holland 0 444 90232 5

Library of Congress Cataloging in Publication Data

Main entry under title:

Advances in Peritoneal Dialysis
Proceedings of the Second International Symposium on Peritoneal Dialysis
Berlin (-West), June 16–19, 1981

(International Congress Series No. 567)
Includes Bibliographies.
Includes Indexes.
1. Peritoneal dialysis--Congresses. 2. Ambulatory medical care--Congresses. I. Gahl, G. (Gerhard) M., 1938- . II. Kessel, M. (Michael). III. Nolph, Karl D. IV. Series. [DMLM: 1. Peritoneal dialysis--Congresses. 2. Ambulatory care--Congresses. W3 EX89 no. 567 1981 / WJ 378 C762 1981.]
RC901.7.P47C66 617'.461059 81-12516
ISBN 0-444-90232-5 (Elsevier-North Holland) AACR2

Publisher:
Excerpta Medica
305 Keizersgracht
1000 BC Amsterdam
P.O. Box 1126

Sole distributors for the USA and Canada:
Elsevier North-Holland Inc.
52 Vanderbilt Avenue
New York, NY 10017

Printed in The Netherlands by Casparie Amsterdam

PREFACE

At the present time interest in peritoneal dialysis is growing fast. Therefore, in order to ensure rapid publication it was decided to publish the Proceedings of the Second International Symposium on Peritoneal Dialysis, held in Berlin (-West), June 16–19, 1981, in a camera-ready form. We feel very much indebted to all authors for submitting their manuscripts at the time of the meeting, or even earlier, and for their adherence to the instructions to authors, thus making the basis for a speedy publication. However, our goal would not have been achieved without the close cooperation and valuable support from Excerpta Medica.

Thus, with a few exceptions, all presentations could be included in the Proceedings. Unfortunately lack of space and limited funds required the omission of the nursing sessions and the discussions, although many valuable comments were made. In order to facilitate reading of the Proceedings, oral presentations and poster presentations dealing with the same main topic are grouped together, indicating the important role of the poster presentations.

We would like to extend our thanks to Travenol who so generously supported the Symposium and made this publication possible.

May this publication serve to further develop peritoneal dialysis and define its role for treatment of patients with renal failure.

August 1981 **G.M. Gahl, M. Kessel**
Department of Internal Medicine and Nephrology, Klinikum Charlottenburg, Freie Universität Berlin, Berlin (-West), Germany
and K.D. Nolph
Division of Nephrology, Department of Medicine, Harry S. Truman Memorial Veterans Hospital and University of Missouri Health Sciences Center, Columbia, MO, U.S.A.

INTRODUCTORY REMARKS

G.M. Gahl
Department of Nephrology, Klinikum Charlottenburg, Freie Universität Berlin, Berlin (-West), Germany

During the last two years a tremendous number of local, national and international meetings devoted to peritoneal dialysis have been organized. With this in mind I asked myself, whether we really needed this Second International Symposium on Peritoneal Dialysis. However, three months ago, when the deadline for the submission of abstracts had passed, my doubts dissipated: the great interest in this Symposium was clearly reflected in the number of abstracts (154) received for consideration, and by the fact that approximately 500 active participants from 41 different countries registered in advance.

Although I have always stressed that this Conference is not a CAPD Symposium, it is interesting to note that among the 154 abstracts submitted all but 25 deal with continuous ambulatory peritoneal dialysis (CAPD). This emphasizes the importance of this relatively new form of treatment at the present time.

As you can imagine it was difficult, with such a large number of abstracts, to set up the programme for this Symposium. This was particularly true as it was felt that parallel sessions should be avoided at such a relatively small Symposium, at least at this stage in the development of peritoneal dialysis. Therefore, we were forced to reject some papers among which were several of very high quality. The five members of the Scientific Committee who reviewed all the abstracts had to keep in mind the overall programme, which was to present a comprehensive and up to date summary of peritoneal dialysis. Therefore, we should not grumble and attack the programme committee too strongly but should remember that the first abstract ever dealing with CAPD (although the term had not been coined at the time) was rejected by the American Society of Artificial Internal Organs in 1976.

I am particularly happy about the decision to include in the programme a parallel nursing session, which was organized by Mrs. Barbara Prowant from Columbia, Missouri. I feel that this aspect is of major importance today, because worldwide more and more centres are developing peritoneal dialysis programmes, where nurses play key roles. The technical exhibition forms another essential part of the Symposium, informing us of the present state of technical development.

Although we will be talking mostly about peritoneal dialysis during the next few days, I do hope that a critical audience and lively discussions will help destroy the notion that we rely solely on this method, but that we regard peritoneal dialysis as one of our possible approaches for patients with end-stage renal disease. I do believe that we will have an excellent and stimulating meeting, which I hope will answer most of the questions that emerged from the First International Symposium on Peritoneal Dialysis which was held in Mexico three years ago.

I am very much indebted to the Sponsors of this Symposium: the International Society of Nephrology, the Deutsche Forschungsgemeinschaft, the Freie Universität Berlin, the Senat of Berlin and the Industry, for their generous support. Their help cannot be over-emphasized.

Finally I would like to thank the Executive Committee for bringing the Symposium to Berlin, and thus giving me the chance to host this meeting. On behalf of the Executive, the Scientific and the Local Organizing Committees, I welcome all of you to Berlin, and I hope that you will find the Symposium interesting and rewarding.

INTRODUCTORY REMARKS

Dr. Alejandro Treviño Becerra, Chief of the Nephrology Departament, Hospital de Especialidades, Centro Médico "La Raza", IMSS, México 15, D.F., MEXICO.

During the last three years peritoneal dialysis (PD) has been firmly established, Specially Continous Ambulatory Peritoneal Dialysis (CAPD) and other mechanical methods that have improved the efficiency as well as the safety of this procedure. As a result, an increasing interest has been observed that can be inferred from the following data; The First International Symposium on Peritoneal Dialysis held in Chapala, México, registered 150 participants; 44 free papers were presented and 4 stands in the exhibition in Berlin these figures have increased more than threefold.

Three years ago in Chapala an outstanding review was made of the basic concepts of the intracorporeal dialysis treatments, showing also different implements and modifications (1). Today PD is not more as a third class treatment; rather, as a first class treatment and in some aspects even better than hemodialysis. Five books have been published, about those subjects, no less than 200 papers and a quarterly bulletin of PD appears in the literature. Research and the aspects concerning care and cost for the patient have been highly productive as can be seen by the constantly increasing numbers of patients on PD and CAPD. In June 1978 just two countries had this treatment available with only 24 patients; Already there are patients who had been on CAPD for 4 years. At present at least 7500 patients in 60 countries throughout the world are being treated by CAPD. If we compare CAPD with extracorporeal dialysis, renal trasplantation, hemoperfusion, we can see that CAPD has had a more significant increase. We know the great impact of CAPD in Canada, Italy and Great Britain, countries where a high porcentage of uremic patients are now in PD and also countries like Bangladesh who has 6 patients on CAPD of the population of 7 on dialysis.

Costs have remained not very high but it is estimated that the first year for a patient on CAPD will cost aproximatly $14,000 (U.S. currency) the following years cost less, roughly $11,000 and according to data

from Moncrief, approximately $1,200 monthly.

During this Symposium much will bee said about morphology, Physiology, peritoneal kinetics, nutritional and metabolic factors of patients on CAPD, problems of diabetes, renal bone disease, anemia, cardiovascular, nervous system functions and peritonitis in patients on PD Catheters will be another topic of discussion. We will hear, no doubt, that the interrogations from 1978 have aready been clarified concerning protein supplement, balance of fluid, and blood pressure control but there are still old problems to solve and of course new ones.

Nephrology that has revolutionized medicine introducing artificial kidneys, renal trasplantation and blood exvivo perfusion is now making another significant contribution with the avent of peritoneal route that had been used for administration of insulin, total nutrition, etc. Now is feasible that partial substitution of an Organ by another apparently foreign, for example terminal kidney for healthy peritoneal capillaries. A layman observing the dialysate that has been in the peritoneal cavity for 4 or 6 hours will think this fluid has the aspect of urine, that is, the peritoneum is producing urine, but is a bad quality urine.

We do not know yet if endocrine renal function can be substituted by the peritoneal splanchnic capillaries; nor are we certain that this membrane can substitute the tubular, interstitial and macular function of the healthy kidney. From this it can be inferred, that chronic renal failure patients should be on CAPD when they still have residual endocrine function. CAPD and CCPD supports the theory that uremic syndrome is due to the accumulation of endogenous toxic substance, together with metabolities product of drug accumulation, and malnutrition as well. This doesn't happens in CAPD patients, the peritoneum removes substances with different molecular weights, detoxifying the patient who is not on high doses of multiple drugs; and lastly the patient eats better and is not malnourished.

After reviewing the significant progress attained in the area of PD we can conclude that this therapeutic modality has competed with it and now is parallel to extracorporeal dialysis, but I do not think it is honest to expect CAPD to solve the problem of chronic uremia if the artificial kidney has not been able to do (Table I).

TABLE I.- COMPARATIVE FACTORS BETWEEN EXTRACORPOREAL DIALYSIS AND CAPD

	KIDNEY MACHINE	CAPD
AGE	(1943) 38 Years	(1975) 6 Years
CLEARENCE *(ml/min)		
Urea	135	84
B-12	30	53
Inulina	5	39
HOURS OF TREATMENT A WEEK	9 to 18	144 to 168
LITRES OF FLUID A WEEK	360	54
COST IN U.S. DOLLARS FOR A YEAR	12,500 to 23,000	11,000 to 14,000
HEMATROCRIT		
BLOOD PRESSURE		
PARATOHORME		
ADVERSE EFFECTS	MULTIFACTORIAL HAEMODIALYTIC SYSNDROME (**)	LOCAL COMPLAINTS PERITONITIS HYPERTRIGLYCERIDEMIA
TECHNICAL IMPROVE	STEADY	CONTINOUSLY

* Popovich 17 Cont. to Nephrology, 1979 (Basel)
** Treviño B.: Rev. Med. IMSS, 1981 (México).

In our patients, biochemical control obtained with CAPD are better than those obtained with hemodyalisis. This results is more favourable econimic and psychological conditions and less labour problems for chronic renal failure patients on CAPD; this is what are describing in a of this book (2) where we stress that CAPD is for us the only therapeutic modality for uremic outpatients. We do not think that peritonitis per se avoid treatment with PD. Metabolic complications can occur such as hypertriglyceridemia that remains unexplainable (3).

It is possible that when this meeting is adjourned we will be able to know if we are now closer to the ideal intracorporeal dialysis or what steps must be taken to achieve this objective (Table II). Among other things availability of safer catheter connexions, an ideal formula for the peritoneal dialysis solution and very important finnally not inflation the cost and widespread the information. The community of scientific working on PD we must help the peritoneum membrane to produce real urine, without any risk.

TABLE II.- FUTURE OF INTRACORPOREAL DIALYSIS

- SAFER CATHETER CONNEXIONS
- IDEAL PERITONEAL SOLUTION FORMULA
- BETTER ACCESS TO ABDOMINAL CAVITY
  - NATURAL ORIFICES OR VASCULAR IMPLANT
- CUT COSTS AND WIDESPREAD INFORMATION

REFERENCES

1.- Contr. Nephrol. Vol. 17, (Karger, Basel 1979)

2.- Treviño, B.A.; Erbessd, M.L; Zuñiga, V; et al Four factors in the evolution on patients in different types of dialysis. Publish in this volumen.

3.- Treviño B.A.; Monteon, F; Toledo, M; Aviles, C; Hypertriglyceridemia in patients on continous ambulatory peritoneal dialysis. Publish in this volumen.

CONTENTS

Posters

Session III. Clinical experience with different techniques; catheters
Chairmen: R.P. Popovich and M. Kessel

Posters

Posters

Session VII. Diabetes

Chairmen: M. Legrain and N.M. Thomson

Session VIII. Metabolic aspects and nutrition
Chairmen: M.J. Blumenkrantz and N.G. De Santo

Posters