東南アジアの発展途上国に対する透析液清浄化支援

- Purification Support of Dialysis Fluid in developing Southeast Asian countries -

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The Status of Dialysis Therapy in Southeast Asian Countries

(As of 2011)

	Patients, n	Percentage of population	Facilities, n
Cambodia	200	0.001	10
Myanmar	600	0.001	28
Philippines	10,000	0.011	270
Vietnam	14,000	0.015	130
Malaysia	23,500	0.083	600
Thailand	29,500	0.044	500
Korea	45,009	0.093	614
Taiwan	63,655	0.275	552
China	272,000	0.020	3,500

Table 1. Number of dialysis facilities and patients

Table 2. Cost of dialysis (USD) and percentage of out-of-pocket payments

	HD (per session)	CAPD (monthly)	Percentage of out-of-pocket payments
Cambodia	55	570	100
Myanmar	55	750	100
Philippines	50	240	80
Vietnam	30	300	0
Malaysia	50	unknown	0
Thailand	25	500	0–25
Korea	130	1,200	10
Taiwan	170	2,000	0
China	90	800	5–30

Naramura T, Hyodo T, Kokubo K, et al : Dialysis and Quality of Dialysate in Southeast Asian Developing Countries.
Nephron Extra 4:64–69, 2014

－NGO Ubiquitous Blood Purification International－
Purification Support of Dialysis Fluid

透析施設 A

	Endotoxin (EU/mL)	Bacterial Colony (CFU/mL)
Tap Water	7.09	＞3000
RO Water	0.245	＞3000
Dialysate	0.314	＞3000

透析施設 B

	Endotoxin (EU/mL)	Bacterial Colony (CFU/mL)
Tap Water	11.26	980
RO Water	0.212	380
Dialysate1	0.125	290

透析施設 C

Tap Water	18.11	＞3000
RO Water	0.861	1000
Dialysate	1.082	950

透析施設 D

Tap Water	8.940	＞3000
RO Water	0.346	＞3000
Dialysate1	0.521	＞3000

カンボジア王国への透析液清浄化支援

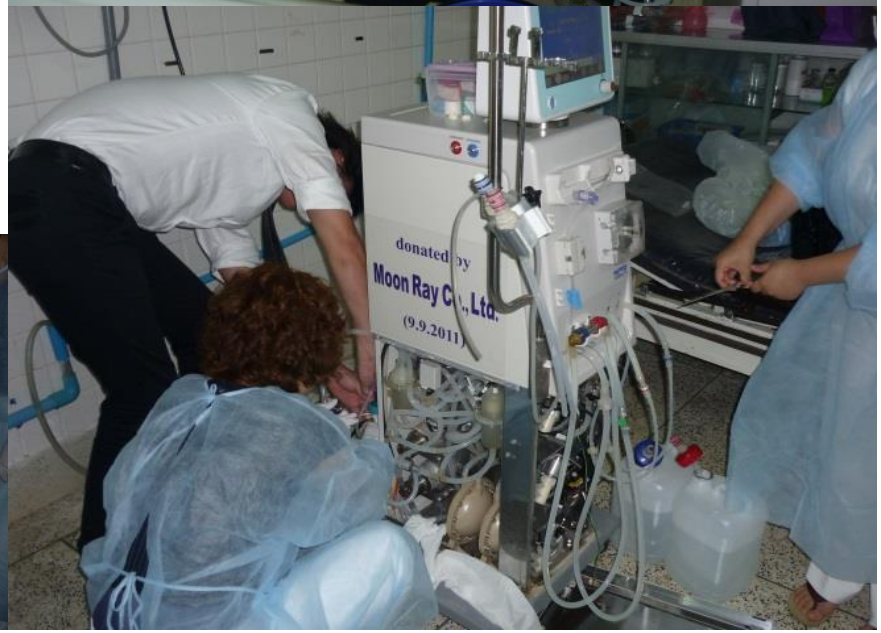
	Endotoxin (EU/mL)	Bacterial Colony (CFU/mL)
RO Water	0.120	180
Dialysate	0.650	380

	Endotoxin (EU/mL)	Bacterial Colony (CFU/mL)
Dialysate	＜0.001	＜0.1

ミャンマー連邦共和国への透析液清浄化支援

	Endotoxin (EU/mL)	Bacterial Colony (CFU/mL)
RO Water	6.200	＞300
Dialysate	1.40	＞300

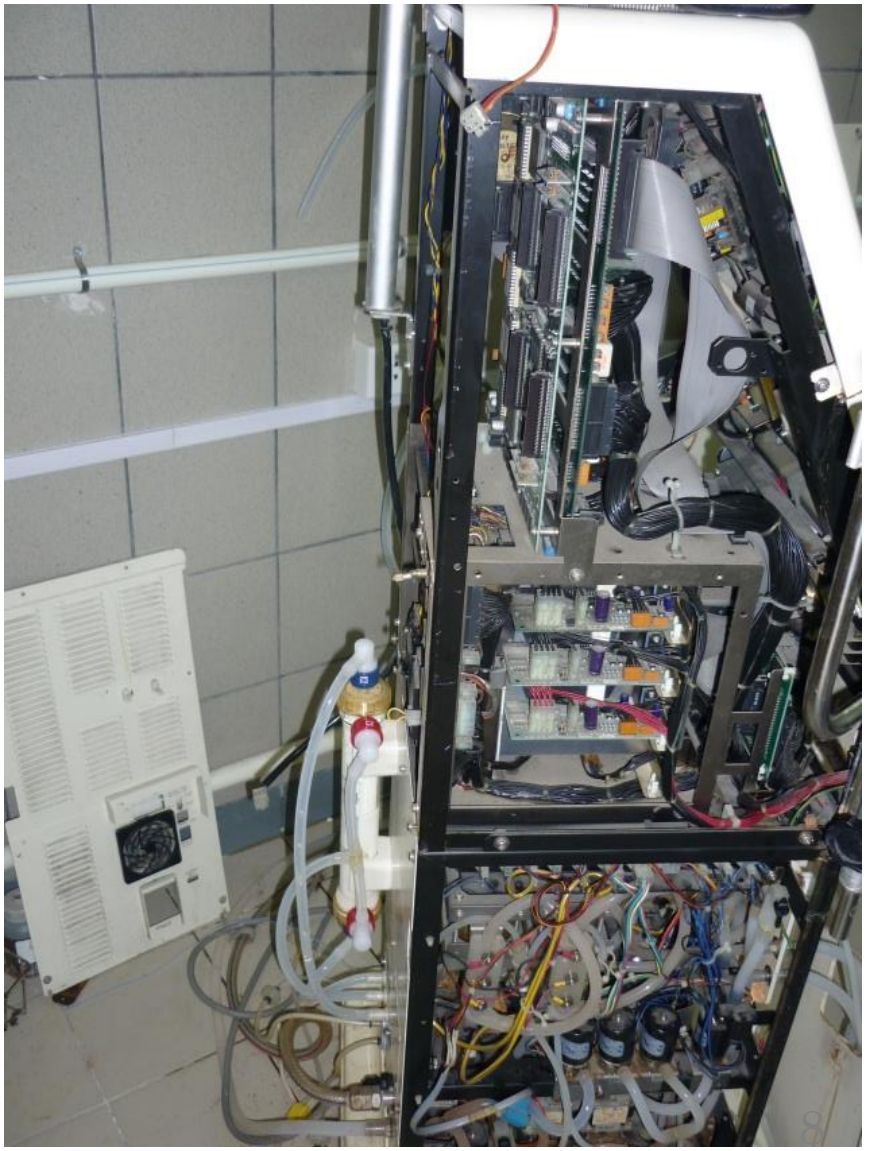
	Endotoxin (EU/mL)	Bacterial Colony (CFU/mL)
Dialysate	＜0.001	＜0.1



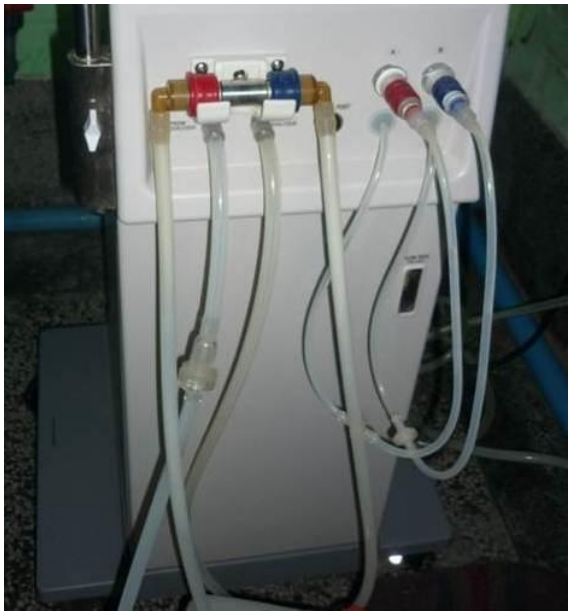
ベトナム社会主義共和国への透析液清浄化支援

	Endotoxin (EU/mL)	Bacterial Colony (CFU/mL)
RO Water	1.490	＞300
Dialysate	0.920	＞300

	Endotoxin (EU/mL)	Bacterial Colony (CFU/mL)
Dialysate	＜0.001	＜0.1



Issue in the Future



DIALYSIS, RENAL TRANSPLANTATION, CLINICAL ENGINEERING, AND DIET THERAPY FOR DIABETES MELLITUS AND CHRONIC KIDNEY DISEASE

カンボジアにおける透析関連専門職育成支援会議

~ intensive seminar ~

March 29 ~ April 5, 2015

Phnom Penh, Cambodia

JAC-DSC

Messages

President of the Japanese Assistance Council of Establishing Dialysis Specialist System in Cambodia (JAC-DSC)

Hideki Kawanishi, M.D., Ph.D.

Director, Kidney Center and Surgery, Tsuchiya General Hospital, Hiroshima, Japan
Clinical Professor, Faculty of Medicine, Hiroshima University, Hiroshima, Japan
Vice President, International Society of Blood Purification (ISBP) / Congress President of ISBP 2016
President, Japanese Society for Hemodiafiltration / Council Member, Japanese Society for Peritoneal Dialysis
Council Member, Japanese Society for Dialysis Access / Council Member, Japanese Society for Blood Purification in Critical Care
Steeling committee of PDOPPS / NGO Ubiquitous Blood Purification International, Yokohama, Japan
Guest Professor, International University, Phnom Penh, Cambodia

Dear Participants:

The number of patients being treated for end-stage renal disease (ESRD) globally was estimated to be 3,200,000 at the end of 2013 and, with a 6% growth rate, continues to increase at a significantly higher rate than the world population. In particular, a remarkable increase in ESRD incidence has been observed in Asian countries. However, access to treatment is still limited in many developing countries, and a number of patients with terminal renal failure do not receive treatment. Improvements in dialysis systems and staff education are necessary to increase patient survival.

The Dialysis, Renal Transplantation, Clinical Engineering, and Diet Therapy for Diabetes Mellitus (DM) and Chronic Kidney Disease (CKD) education program provides a training and educational opportunity within the frame of the Cambodia Dialysis Medical Staff Engagement Support Association for students who are interested in chronic and end-stage kidney diseases. This education program is provided to Cambodian younger physician and medical staff who are interested in improving their scientific knowledge in CKD management and dialysis therapies. We would like to invite not only the junior medical staff but also all dialysis team in Cambodia to participate.

Vice President of the JAC-DSC

Toru Hyodo, M.D., Ph.D.

Director, Eijin Clinic, Hiratsuka, Japan / Invited Associate Professor, Department of Urology, Kitasato University, Sagamihara, Japan
Congress President of the Japanese Society for Hemodialfiltration 2011 / Council Member, Japanese Society for Dialysis Therapy (JSDT)
Council Member, Japanese Society for Hemodiafiltration / Council Member, Japanese Society for Peritoneal Dialysis
Council Member, Japanese Society for Dialysis Access / Council Member, Japanese Society for Renal Nutrition
Vice Chairperson of JSDT Committee to Support Young Doctors and Co-medical Staffs in Dialysis Fields in Developing Countries
Secretary General, NGO Ubiquitous Blood Purification International, Yokohama, Japan
Guest Professor, International University, Phnom Penh, Cambodia

Dear, Senior and Young Doctors in Cambodia, Medical Students, Nursing Students, and Pharmaceutical and Dental Students of International University:

NGO Ubiquitous Blood Purification International (UBPI) and IU established the Cambodia-Japan Friendship Blood Purification Center at Sen Sok International University Hospital (SSIUH) in 2010. Only 3 nurses and 4 doctors have received dialysis specialist training by NGO UBPI since its establishment. Among them, 2 nurses and 3 doctors are now treating or planning to treat hemodialysis patients at three different hospitals (SSIUH, IU Branch Hospital, and the other hospital) in Cambodia. These nurses and doctors are educating several nurses at their own hospitals. However, the number of patients with ESRD and CKD in Cambodia has increased significantly. Improvements in dialysis systems and staff education are necessary to increase the survival of these patients. Dialysis specialists will also be needed not only to provide patient treatment but also to educate hospital staff. Moreover, new dialysis machines are highly sophisticated. Thus, specialists capable of operating such complicated mechanical medical devices are needed. Such specialists, known as clinical engineers serve an important role in dialysis treatment.

ESRD and CKD patients require special diet therapies. For example, low-protein diet therapy is recommended for patients with CKD-associated nephritis. Diabetic CKD and ESRD patients require both low-protein and blood sugar-suppressing diet therapies. These diet therapies are very sophisticated and complicated and thus, require specialists experienced with their administration. In Cambodia, Myanmar, and Vietnam, specialists in dietetics are lacking. Universities in advanced countries, such as Japan and the United States, offer courses in nutrition to educate future dietitians.

The establishment of Faculty of Clinical Engineering and Faculty of Nutrition at SSIU is planned in the future.

The Dialysis, Renal Transplantation, Clinical Engineering, and Diet Therapy for DM and CKD education program is hosted by IU and the Japanese Assistance Council of Establishing Dialysis Specialist System in Cambodia (JAC-DSC). Many members of NGO UBPI attend the JAC-DSC.

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