Hémodialyse de maintenance chez la personne (très) âgée :quand ne pas la proposer ?

Dr P.Saudan
Nephrology Unit Geneva, Switzerland

Hôpitaux Universitaires Genève

Vignette 1

W.H 1922

- Début HD fin avril 2016 suite à décompensation card itératives

- ATCD: Cardiopathie isch et rhythmique, HTA, DNID

- Suivi par néphrologue et vu en consultation de prédialyse

mis en dialyse sur demande famille principalement

- Depuis fin avril , hospitalisé en quasi-permanence

avec dégradation progressive facultés physiques et mentales…

Vignette 2

- **W-U. N 1931**
- Début HD fin février 2016 suite à syndrome urémique durant longue hospitalisation

- ATCD: Cardiopathie isch et rhythmique, HTA, **MMS à 17/30**

- Suivi par néphrologue et vu en consultation de prédialyse

mis en dialyse sur demande famille principalement
(et collègues)

- Depuis fin avril , à domicile mais hospitalisation de 12 jours en Mai

16 et réhospitalisé le 16.09.16

- facultés physiques et facultés mentales médiocres mais stables..

Hôpitaux Universitaires Genève

Vignette 3

R.C. 1924

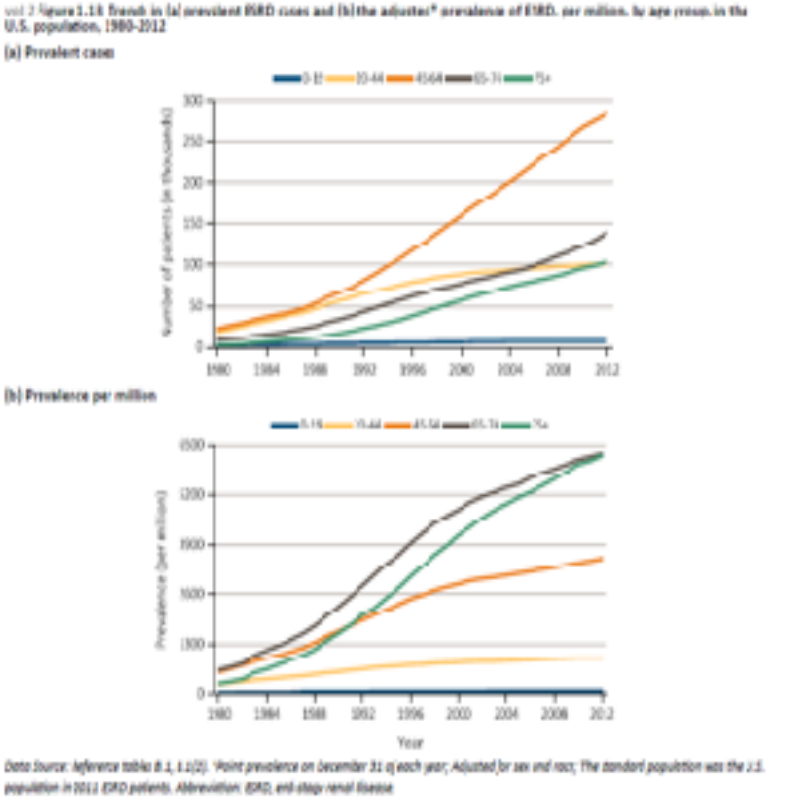
- Début HD septembre 2015 sur FAV

- ATCD: IRC néphropathie vasculaire HTA, AVC régressif en 2009

- Suivi par néphrologue (déc.2014) et vu en consultation de prédialyse
- Hospitalisé durant 5 jours en août 2016 (thrombose FAV)
- A domicile, facultés physiques et mentales sp

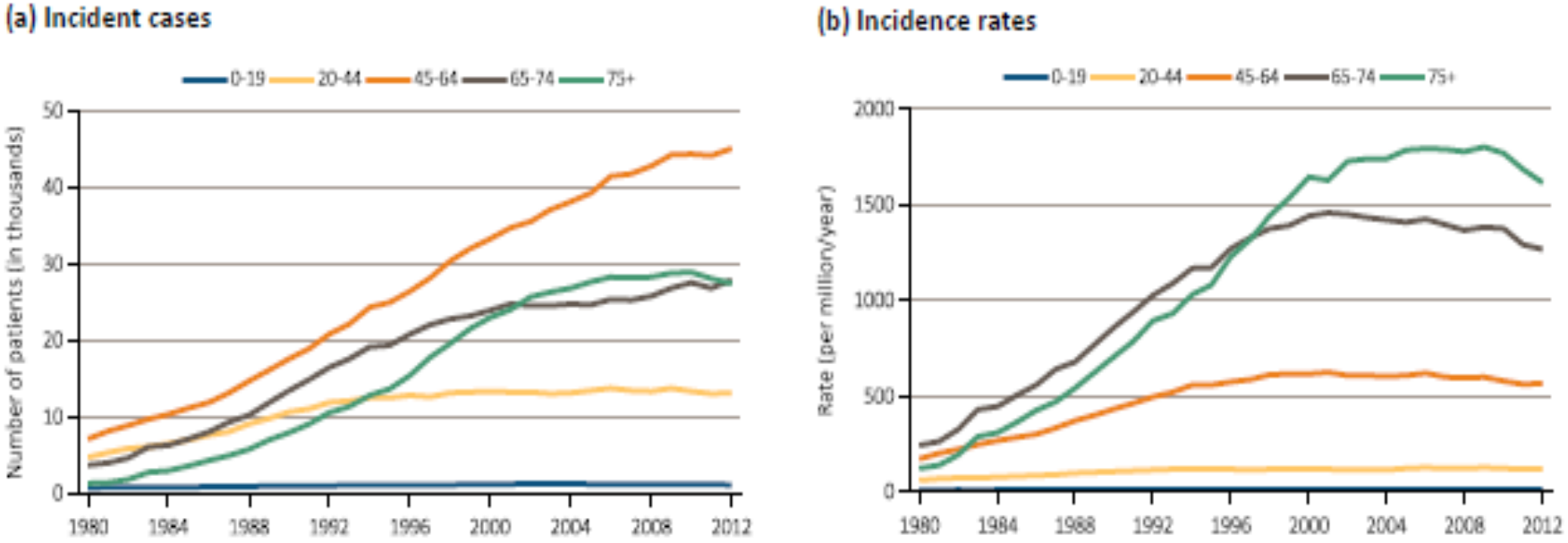
2014 USRDS Annual Data Report | Volume 2 - ESRD

In 2012, the adjusted prevalence of ESRD per million was 83 for age 0-19, 938 for age 20-44, 3,550 for age 45-64, 6,302 for age 65-74, and 6,261 for age 75+ (Figure 1.13.b). The prevalence per million continues to increase in all age groups, with the relative magnitude of increase greater in older age groups. Relative increases since 2000 are 14% at age 0-19, 16% at age 20-44, 23% at age 45-64, 30% at age 65-74, and 50% at age 75+.



2014 USRDS Annual Data Report | Volume 2 - ESRD

vol 2 **Figure 1.4 Trends in (a) ESRD incident cases, in thousands, and (b) adjusted* ESRD incidence rate, per million/year, by age group, in the U.S. population, 1980-2012**



*Data Source: Reference tables A.1, A.2(2). *Adjusted for sex and race. The standard population is the U.S. population in 2011. Abbreviation: ESRD, end-stage renal disease.*

Incidence of ESRD: By Age

The number of incident ESRD cases per year amorg children and among adults ages 20-44 has been generally stable for the past two decades (Figure 1.4.a.). By contrast, for age 45 and over, the number of incident ESRD cases per year had been rising for many years, with especially dramatic increases for age 65 and over. However, these trends appear to have plateaued over the past two to three years; additional follow-up is needed to confirm these findings.

Hôpitaux Universitaires Genève

Octogenarians Reaching End-Stage Renal Disease: Cohort Study of Decision-Making and Clinical Outcomes

DOMINIQUE JOLY,*† DANY ANGLICHEAU,* CORINNE ALBERTI,‡ ANH THU NGUYEN,† MALIK TOUAM,*† JEAN PIERRE GRUNFELD,* and PAUL JUNGERS†

*Nephrology Unit, Necker Hospital and Université René Descartes-Paris V, Paris, France; †INSERM U507, Necker Hospital, Paris, France; and ‡Biostatistics, Robert Debré Hospital, Paris, France.

But de l'étude:

1) Examiner facteurs associés avec décision de proposer la dialyse chez les > 80 ans
2) Identifier marqueurs associés avec survie en dialyse chez les > 80 ans

Dessein étude:

Analyse rétrospective (cohorte prospective patients > 80 ans mis en dialyse ou non entre jan 89 et déc 2000

JASN 2003

Hôpitaux Universitaires Genève

Octogenarians Reaching End-Stage Renal Disease: Cohort Study of Decision-Making and Clinical Outcomes

DOMINIQUE JOLY,*† DANY ANGLICHEAU,* CORINNE ALBERTI,‡ ANH THU NGUYEN,† MALIK TOUAM,*† JEAN PIERRE GRUNFELD,* and PAUL JUNGERS†

*Nephrology Unit, Necker Hospital and Université René Descartes-Paris V, Paris, France; †INSERM U507, Necker Hospital, Paris, France; and ‡Biostatistics, Robert Debré Hospital, Paris, France.

Table 1. Patient characteristics by intention to propose dialysis (group 1) or conservative measures (group 2)[a]

	Group 1 ($n = 107$) n (%) or mean ± SD	Group 2 ($n = 37$) n (%) or mean ± SD	P
Inclusion period			
1989 to 1992	21 (61.8)	13 (38.2)	
1993 to 1996	38 (79.2)	10 (20.8)	.15
1997 to 2000	48 (77.4)	14 (22.6)	
Demography			
age (yr)	82.2 ± 2.9	84.1 ± 2.5	.12
male gender, %	59 (55.1)	14 (37.8)	.07
ethnic minority, %	6 (5.6)	5 (13.5)	.12
socially isolated, %	15 (14.7)	16 (47.1)	003
Clinical			
late referral (<4 mo)	31 (28.9)	19 (51.4)	.014
EPO use before inclusion	24 (22)	8 (21.7)	9
Karnofsky score[b]	63 ± 20	55 ± 18	.03
Comorbid conditions			
malignancy (actual or past)	13 (12.2)	5 (13.5)	.8
ischemic heart disease	45 (42)	18 (48.6)	.48
cardiac failure	18 (10.2)	19 (51.4)	.24
dysrhythmia	26 (24.3)	10 (27)	.74
peripheral vascular disease	23 (21.5)	8 (21.6)	.98
sequelae of stroke and/or overt dementia	13 (12.2)/6 (5.6)	8 (21.6)/3 (8.1)	3/6
diabetes	7 (6.5)	8 (21.6)	.008

JASN 2003

Hôpitaux Universitaires Genève

KARNOFSKY PERFORMANCE STATUS SCALE DEFINITIONS RATING (%)

CRITERIA

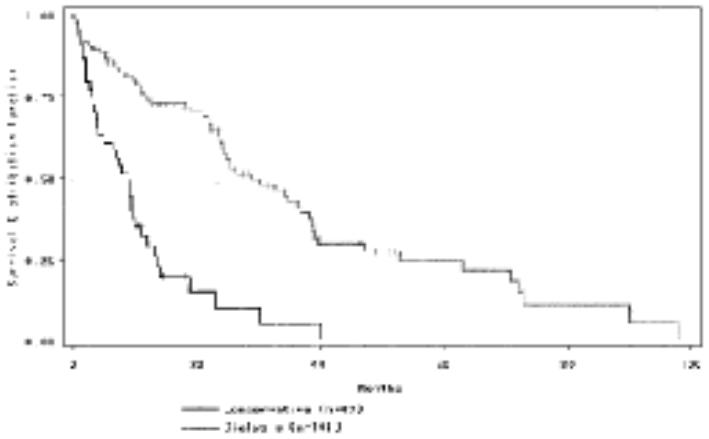
Able to carry on normal activity and to work; no special care needed.	100	Normal no complaints; no evidence of disease.
	90	Able to carry on normal activity; minor signs or symptoms of disease.
	80	Normal activity with effort; some signs or symptoms of disease.
Unable to work; able to live at home and care for most personal needs; varying amount of assistance needed.	70	Cares for self; unable to carry on normal activity or to do active work.
	60	Requires occasional assistance, but is able to care for most of his personal needs.
	50	Requires considerable assistance and frequent medical care.
Unable to care for self; requires equivalent of institutional or hospital care; disease may be progressing rapidly.	40	Disabled; requires special care and assistance.
	30	Severely disabled; hospital admission is indicated although death not imminent.
	20	Very sick; hospital admission necessary; active supportive treatment necessary.
	10	Moribund; fatal processes progressing rapidly.
	0	Dead

Hôpitaux Universitaires Genève

Octogenarians Reaching End-Stage Renal Disease: Cohort Study of Decision-Making and Clinical Outcomes

DOMINIQUE JOLY,*† DANY ANGLICHEAU,* CORINNE ALBERTI,‡ ANH THU NGUYEN,† MALIK TOUAM,*† JEAN PIERRE GRUNFELD,* and PAUL JUNGERS†

*Nephrology Unit, Necker Hospital and Université René Descartes-Paris V, Paris, France; †INSERM U507, Necker Hospital, Paris, France; and ‡Biostatistics, Saint Louis Hospital, Paris, France.



Months	0	12	24	36	48	60	72	84	96
Conservative treatment									
N patients at risk	43	10	3	1	0				
N cumulated events	0	30	34	36	37				
Dialysis treatment									
N patients at risk	101	63	42	29	12	8	6	[illegible]	1
N cumulated events	0	25	35	43	54	55	57	58	60

Figure 1. Kaplan-Meier survival curves for patients undergoing dialysis or conservative treatment. Each step represents one death. Number of patients remaining in analysis at each time point are indicated. Vertical bars indicate censored data.

Table 2. Causes of death

	Dialysis	Conservative
Number of deaths (%)	61 (60.4)	38 (88.4)
Identified acute vascular event	20 (32.8)	8 (21.)
Cause	12 (19.7)	2 (5.7)
Withdrawal from dialysis or *uremia	10 (16.4)	*13 (34.2)
Cardiac failure/pulmonary edema	6 (9.8)	9 (23.7)
Sudden death	7 (11.5)	3 (7.9)
Infection	2 (3.3)	2 (5.7)
Other (suicide, bleeding, iatrogenic event)	4 (6.6)	1 (2.6)

Median survival:
Dialysis 28.9 mo
Non-dialysis 8.9 mo
Cave: index date : début dialyse ou jour de décision de non-dialyse

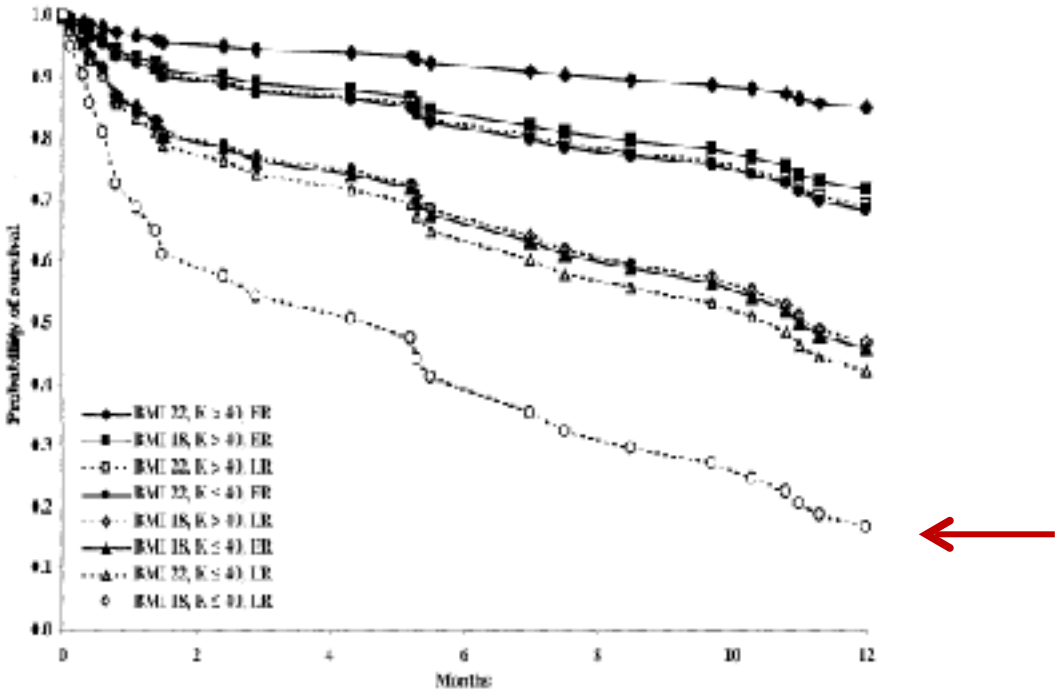
JASN 2003

Hôpitaux Universitaires Genève

Octogenarians Reaching End-Stage Renal Disease: Cohort Study of Decision-Making and Clinical Outcomes

DOMINIQUE JOLY,*† DANY ANGLICHEAU,* CORINNE ALBERTI,‡ ANH THU NGUYEN,† MALIK TOUAM,*† JEAN PIERRE GRUNFELD,* and PAUL JUNGERS†

*Nephrology Unit, Necker Hospital and Université René Descartes-Paris V, Paris, France; †INSERM U507, Necker Hospital, Paris, France; and ‡Biostatistics, Saint Louis Hospital, Paris, France.



JASN 2003

Hôpitaux Universitaires Genève

Octogenarians Reaching End-Stage Renal Disease: Cohort Study of Decision-Making and Clinical Outcomes

DOMINIQUE JOLY,*† DANY ANGLICHEAU,* CORINNE ALBERTI,‡ ANH THU NGUYEN,† MALIK TOUAM,*† JEAN PIERRE GRUNFELD,* and PAUL JUNGERS†

*Nephrology Unit, Necker Hospital and Université René Descartes-Paris V, Paris, France; †INSERM U507, Necker Hospital, Paris, France; and ‡Biostatistics, Robert Debré Hospital, Paris, France.

Identification of social isolation and late referral as baseline characteristics of patients who were not offered dialysis suggest that, besides physicians and patients, an involvement of social workers and primary healthcare professionals may optimize the decision-making process in elderly ERSD patients. Interventions by social workers to minimize the consequences of social isolation could help physicians and patients consider prolongation of life differently. The education of primary healthcare professionals regarding the importance of early referral of elderly patients with renal disease could, as suggested by our data, both influence decision-making toward offering dialysis and positively influence outcome after dialysis initiation. We also hope that encouraging median survival reported in this study will minimize non-referral of pre-ESRD octogenarians to nephrologists.

JASN 2003

Hôpitaux Universitaires Genève

Octogenarians and Nonagenarians Starting Dialysis in the United States

Manjula Kurella, MD, MPH; Kenneth E. Covinsky, MD, MPH; Alan J. Collins, MD; and Glenn M. Chertow, MD, MPH

Background: The elderly constitute the fastest-growing segment of the end-stage renal disease (ESRD) population, but the epidemiology and outcomes of dialysis among the very elderly, that is, those 80 years of age and older, have not been previously examined at a national level.

Objective: To describe recent trends in the incidence and outcomes of octogenarians and nonagenarians starting dialysis.

Design: Observational study.

Setting: U.S. Renal Data System, a comprehensive, national registry of patients with ESRD.

Participants: Octogenarians and nonagenarians initiating dialysis between 1996 and 2003.

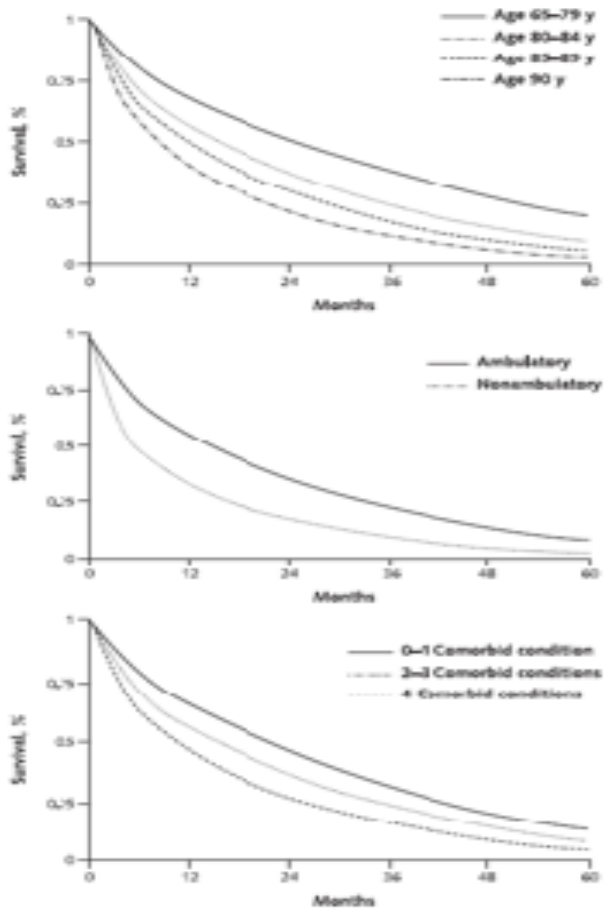
Ann Int Med 2007

Hôpitaux Universitaires Genève

Octogenarians and Nonagenarians Starting Dialysis in the United States

Manjula Kurella, MD, MPH; Kenneth E. Covinsky, MD, MPH; Alan J. Collins, MD; and Glenn M. Chertow, MD, MPH

Figure 2. Survival of octogenarians and nonagenarians at dialysis initiation by age group (top), ambulatory status (middle), and number of comorbid conditions (bottom).



In the bottom panel, comorbid conditions include albumin concentration <35 g/L, anemia, underweight, congestive heart failure, diabetes, ischemic heart disease, chronic obstructive pulmonary disease, cancer, cerebrovascular disease, and peripheral vascular disease.

Median survival:
80-84 : 15.6 mo
85-89: 11.6 mo
≥ 90 : 8.4 mo

Conclusions: The number of octogenarians and nonagenarians initiating dialysis has increased considerably over the past decade, while overall survival for patients on dialysis remains modest. Estimates of prognosis based on patient characteristics, when considered in conjunction with individual values and preferences, may aid in dialysis decision making for the very elderly.

Ann Int Med 2007

Hôpitaux Universitaires Genève

Dialysis or not? A comparative survival study of patients over 75 years with chronic kidney disease stage 5

Fliss E. M. Murtagh[1], James E. Marsh[2], Paul Donohoe[3], Nasirul J. Ekbal[4], Neil S. Sheerin[5] and Fiona E. Harris[2]

[1]Department of Palliative Care and Policy, King's College Hospital, London, [2]Department of Renal Medicine, Epsom and St Helier University Hospitals, Surrey, [3]Department of Renal Medicine, King's College Hospital London, [4]Division of Renal Medicine, St George's Hospital, London and [5]Department of Renal Medicine, Guy's and St Thomas' Hospital, London, UK

To compare survival of elderly patients with stage V CKD treated with either dialysis or conservative management after management decision made

Retrospective analysis (sep 2003- aug 2004) 129 patients > 75 yrs, temps médian de suivi : 540-588 jours

Table 1. Patient demographic data

	Dialysis group $n=52$	Conservative group $n=77$	All patients $n=129$	Statistic (comparing dialysis and conservative groups)
Age in years (%):				
75–79	24 (46.2)	12 (15.5)	36 (27.9)	Mann Whitney U = 1005.00[a]
80–84	23 (44.2)	36 (46.8)	59 (45.7)	
85–89	5 (9.6)	24 (31.2)	29 (22.5)	$P < 0.001$
>89	0 (0.0)	5 (6.5)	5 (3.9)	
Comorbidity score:				
Grade 0	8 (15.4)	10 (13.0)	18 (14.0)	$\chi^2 = 0.201$
Grade 1	34 (65.4)	53 (68.8)	87 (67.4)	$P = 0.90$
Grade 2	10 (19.2)	14 (18.2)	24 (18.6)	df 2
Total	52 (100.0)	77 (100.0)	129 (100.0)	

NDT 2007

Hôpitaux Universitaires Genève

Score de Davies

7 domaines:
-Malignancy, diabetes, IHD, PVD, LVD, Systemic collagen vascular disease, other significant condition (CPOD, liver disease, etc)

Grade 0 : 0 pt
Grade 1: 1-2 pt
Grade 2: ≥ 3 pt (high risk)

> 80 ans : 2pt (high risk)

Davies et al NDT 2002

Hôpitaux Universitaires Genève

Dialysis or not? A comparative survival study of patients over 75 years with chronic kidney disease stage 5

Fliss E. M. Murtagh[1], James E. Marsh[2], Paul Donohoe[3], Nasirul J. Ekbal[4], Neil S. Sheerin[5] and Fiona E. Harris[2]

[1]Department of Palliative Care and Policy, King's College Hospital, London, [2]Department of Renal Medicine, Epsom and St Helier University Hospitals, Surrey, [3]Department of Renal Medicine, King's College Hospital London, [4]Division of Renal Medicine, St George's Hospital, London and [5]Department of Renal Medicine, Guy's and St Thomas' Hospital, London, UK

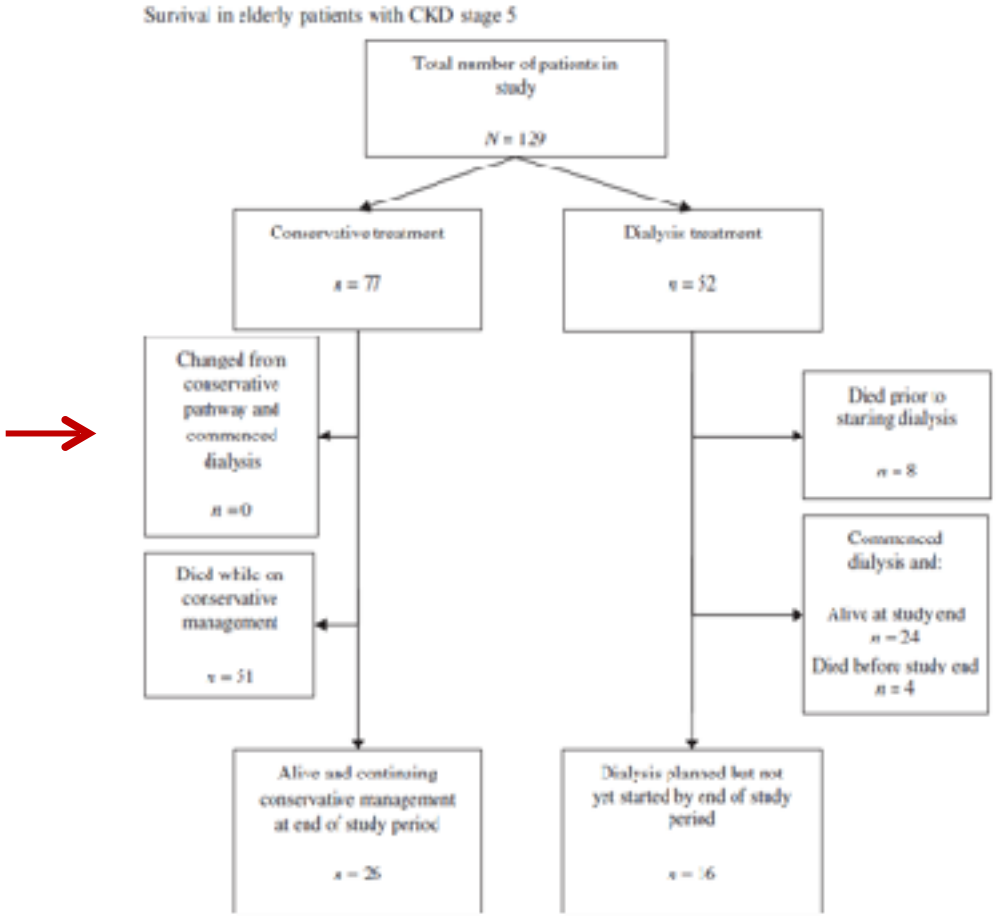


Fig. 1. Flow diagram of study participants and outcomes.

NDT 2007

Hôpitaux Universitaires Genève

Dialysis or not? A comparative survival study of patients over 75 years with chronic kidney disease stage 5

Fliss E. M. Murtagh[1], James E. Marsh[2], Paul Donohoe[3], Nasirul I. Ekbal[4], Neil S. Sheerin[5] and Fiona E. Harris[2]

[1]Department of Palliative Care and Policy, King's College Hospital, London, [2]Department of Renal Medicine, Epsom and St Helier University Hospitals, Surrey, [3]Department of Renal Medicine, King's College Hospital London, [4]Division of Renal Medicine, St George's Hospital, London and [5]Department of Renal Medicine, Guy's and St Thomas' Hospital, London, UK

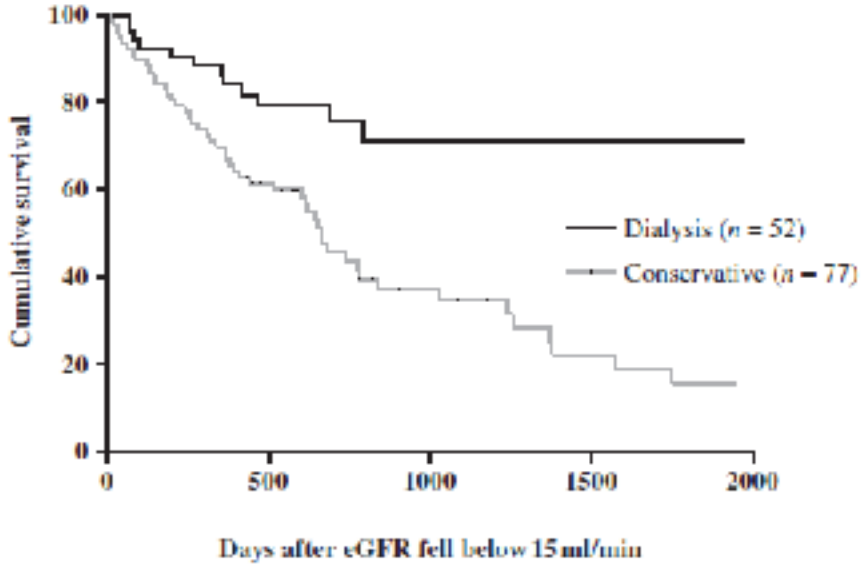


Fig. 2. Kaplan–Meier survival curves comparing the dialysis and conservative groups (log rank statistic = 13.63, $P < 0.001$).

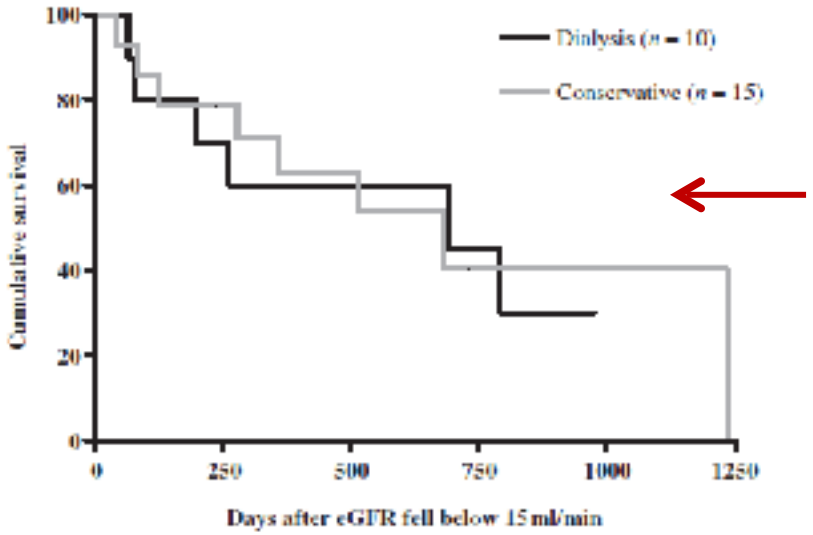


Fig. 3. Kaplan–Meier survival curves for those with high comorbidity (score = 2), comparing dialysis and conservative groups (log rank statistic <0.001, df 1, $P = 0.98$).

Conclusions. In CKD stage 5 patients over 75 years, who receive specialist nephrological care early, and who follow a planned management pathway, the survival advantage of dialysis is substantially reduced by comorbidity and ischaemic heart disease in particular.

Comorbidity should be a major consideration when advising elderly patients for or against dialysis.

Ann Int Med 2007

Hôpitaux Universitaires Genève

Functional Status of Elderly Adults before and after Initiation of Dialysis

Manjula Kurella Tamura, M.D., M.P.H., Kenneth E. Covinsky, M.D., M.P.H., Glenn M. Chertow, M.D., M.P.H., Kristine Yaffe, M.D., C. Seth Landefeld, M.D., and Charles E. McCulloch, Ph.D.

BACKGROUND

It is unclear whether functional status before dialysis is maintained after the initiation of this therapy in elderly patients with end-stage renal disease (ESRD).

METHODS

Using a national registry of patients undergoing dialysis, which was linked to a national registry of nursing home residents, we identified all 3702 nursing home residents in the United States who were starting treatment with dialysis between June 1998 and October 2000 and for whom at least one measurement of functional status was available before the initiation of dialysis. Functional status was measured by assessing the degree of dependence in seven activities of daily living (on the Minimum Data Set–Activities of Daily Living [MDS–ADL] scale of 0 to 28 points, with higher scores indicating greater functional difficulty).

NEJM 2007

Hôpitaux Universitaires Genève

Functional Status of Elderly Adults before and after Initiation of Dialysis

Manjula Kurella Tamura, M.D., M.P.H., Kenneth E. Covinsky, M.D., M.P.H., Glenn M. Chertow, M.D., M.P.H., Kristine Yaffe, M.D., C. Seth Landefeld, M.D., and Charles E. McCulloch, Ph.D.

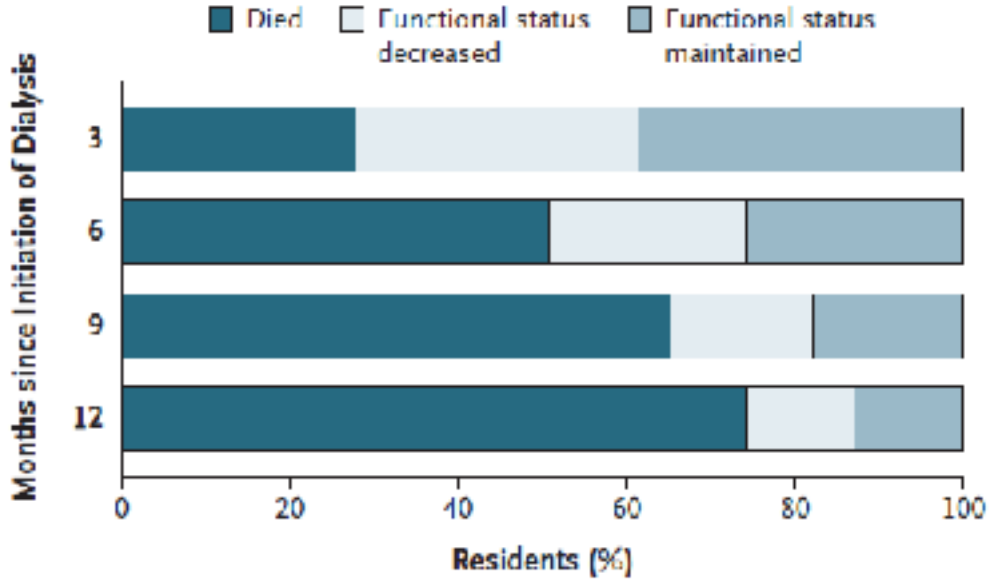


Figure 2. Change in Functional Status after Initiation of Dialysis.

Data were missing for 549 nursing home residents at 3 months, 696 residents at 6 months, 823 residents at 9 months, and 787 residents at 12 months from the full analytic cohort of 3702 residents.

CONCLUSIONS

Among nursing home residents with ESRD, the initiation of dialysis is associated with a substantial and sustained decline in functional status.

NEJM 2007

Hôpitaux Universitaires Genève

Survival of elderly patients with stage 5 CKD: comparison of conservative management and renal replacement therapy

Shahid M. Chardna, Maria Da Silva-Gane, Catherine Marshall, Paul Warwicker, Roger N. Greenwood and Ken Farrington

Renal Unit, Lister Hospital, Stevenage, Hertfordshire SG1 4AB, UK

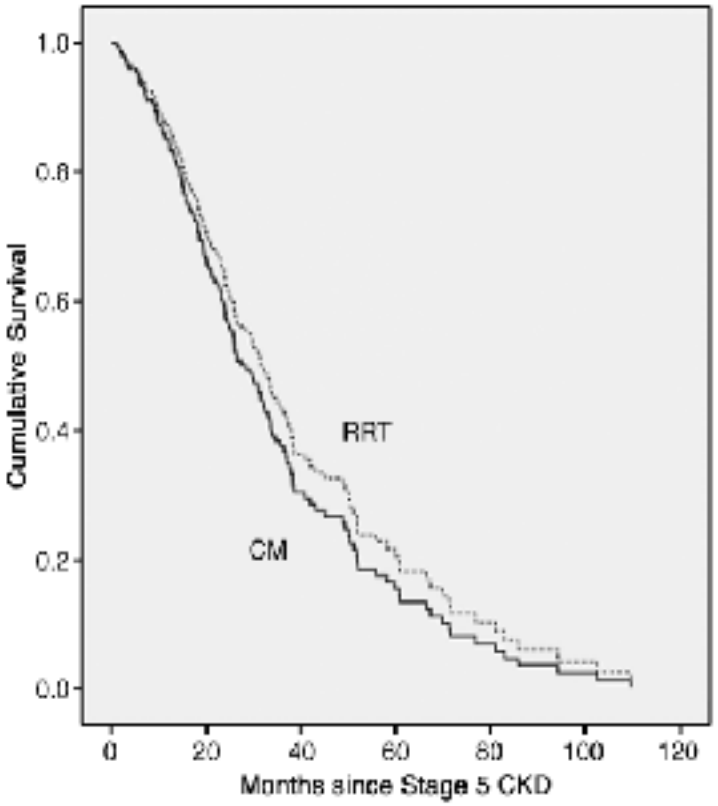


Fig. 3. Cox proportional model survival curve of patients aged >75 years—CM vs RRT—adjusted for age, gender, ethnicity, the presence of diabetes and the presence of high comorbidity. Median survival in RRT patients is better by <4 months, which is not statistically significant (P = 0.43).

NDT 2011

Hôpitaux Universitaires Genève

Survival of elderly patients with stage 5 CKD: comparison of conservative management and renal replacement therapy

Shahid M. Chandna, Maria Da Silva-Gane, Catherine Marshall, Paul Warwicker, Roger N. Greenwood and Ken Farrington

Renal Unit, Lister Hospital, Stevenage, Hertfordshire SG1 4AB, UK

Etude rétrospective
18 ans
844 patients (689 dialysés et 155 traités conservativement)

Table 1. Demographic and clinical details of patients treated by dialysis and conservative kidney management

	Conservative	Dialysis	P-value
Number	155 (18%)	689 (82%)	
Age at stage 5 (years)	77.5 ± 7.6	58.5 ± 15.0	<0.001
% >75 years	68.4	11.2	<0.001
% Male	59.4	66.6	NS
% Non-white	14.2	15.7	NS
% Diabetes	35.5	34.3	NS
% High comorbidity	49.7	17.3	<0.001
eGFR at stage 5 (mL/min/1.73 m^2)	13.2 ± 1.4	13.2 ± 1.4	NS

NDT 2011

Hôpitaux Universitaires Genève

Survival of elderly patients with stage 5 CKD: comparison of conservative management and renal replacement therapy

Shahid M. Chardna, Maria Da Silva-Gane, Catherine Marshall, Paul Warwicker, Roger N. Greenwood and Ken Farrington

Renal Unit, Lister Hospital, Stevenage, Hertfordshire SG1 4AB, UK

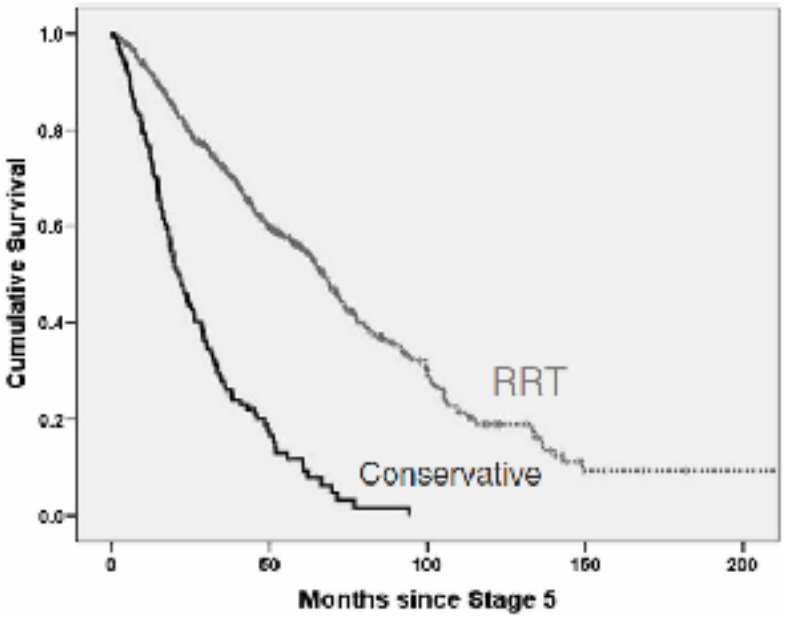


Fig. 1. Kaplan–Meier survival curves from entry into stage 5 CKD for patients treated by RRT (n = 689) and by conservative kidney management (n = 155).

Table 2. Median survival by Kaplan–Meier analysis of patients aged >75 treated by conservative means or by dialysis, stratified by comorbidity group

					95% CI		
		Number	Median	SE	Lower bound	Upper bound	P-value
Low comorbidity	Dialysis	60	36.1	8.4	20.4	53.2	0.03
	Conservative	52	29.4	3.7	22.2	36.6	
Severe comorbidity	Dialysis	17	25.8	4.4	17.3	34.4	0.83
	Conservative	34	20.4	2.4	15.7	25.2	

NDT 2011

Hôpitaux Universitaires Genève

Survival of elderly patients with stage 5 CKD: comparison of conservative management and renal replacement therapy

Shahid M. Chandna, Maria Da Silva-Gane, Catherine Marshall, Paul Warwicker, Roger N. Greenwood and Ken Farrington

Renal Unit, Lister Hospital, Stevenage, Hertfordshire SG1 4AB, UK

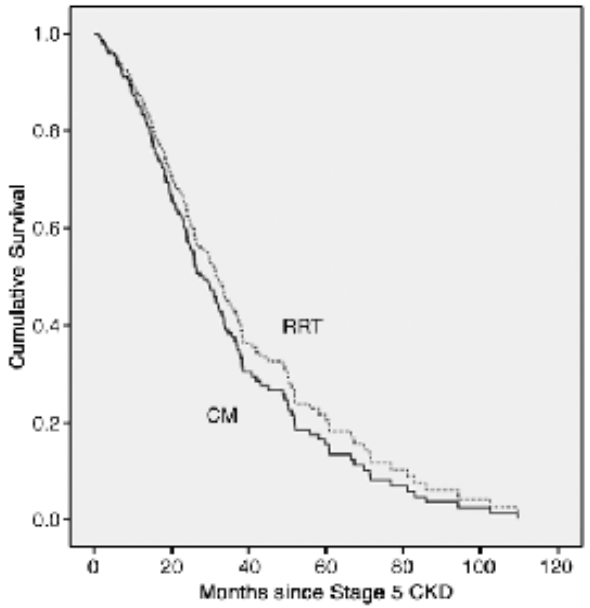


Fig. 3. Cox proportional model survival curve of patients aged >75 years—CM vs RRT—adjusted for age, gender, ethnicity, the presence of diabetes and the presence of high comorbidity. Median survival in RRT patients is better by <4 months, which is not statistically significant (P = 0.43).

Table 6. Cox proportional hazards model for predictors of survival in patients treated by conservative management. Age ≥75 and male gender are significantly associated with increased mortality in this group of patients

Chi square = 22 (P < 0.001)	P-values	Hazard ratio	95% CI for HR	
			Lower	Upper
Gender (female [63] vs male [92])	0.025	0.648	0.442	0.949
Ethnicity (non-white [22] vs white [138])	0.324	1.062	0.627	1.799
Diabetic [55] vs non-diabetic [100]	0.091	1.406	0.948	2.084
Comorbidity (high [77] vs low [78])	0.099	1.365	0.948	1.974
eGFR at stage 5 (mL/min/1.73 m^2)	0.252	0.923	0.804	1.059
Age >75 (yes vs no)	0.009	0.574	0.379	0.869

Conclusions. In patients aged >75 years with high extra-renal comorbidity, the survival advantage conferred by RRT over CM is likely to be small. Age >75 years and female gender predicted better survival in CM patients. The reasons for this are unclear.

NDT 2011

Hôpitaux Universitaires Genève

CKD in Elderly Patients Managed without Dialysis: Survival, Symptoms, and Quality of Life

Mark A. Brown,† Gemma K. Collett,* Elizabeth A. Josland,* Celine Foote,† Qiang Li,† and Hank P. Brennan**

Abstract

Background and objectives Survival, symptom burden, and quality of life (QOL) are uncertain for elderly patients with advanced CKD managed without dialysis. We examined these outcomes in patients managed with renal supportive care without dialysis (RSC-NFD) and those planned for or commencing dialysis.

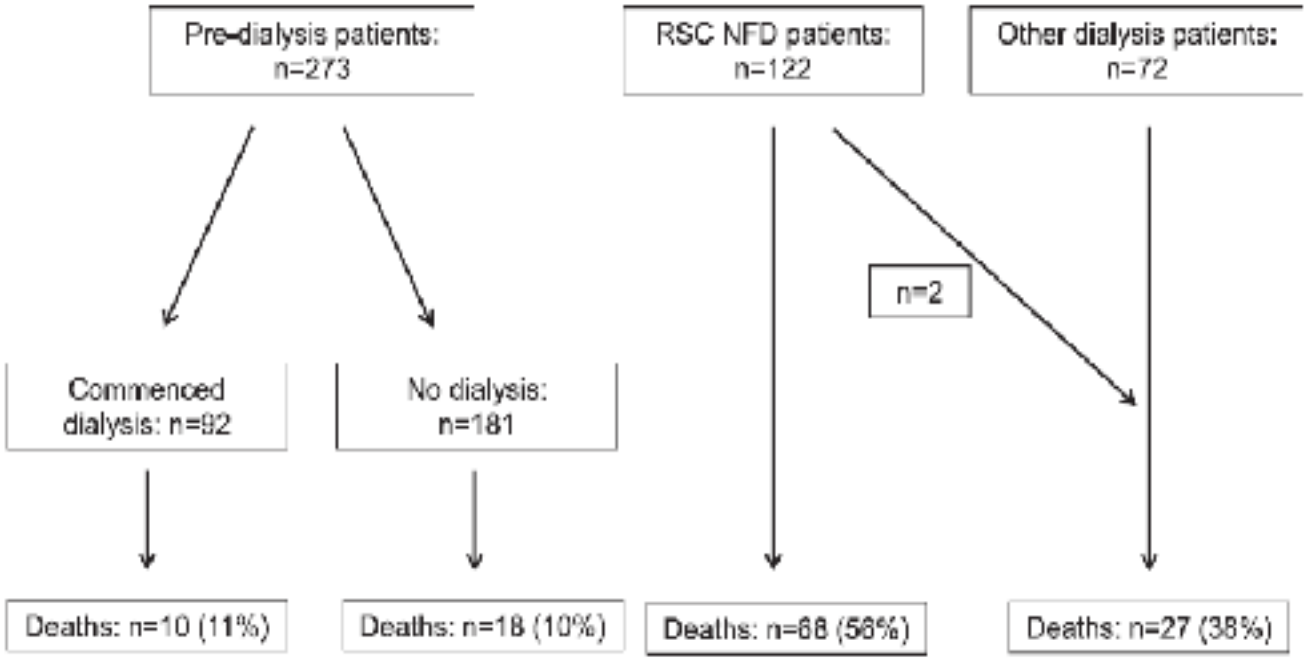
Design, setting, participants, & measurements In this prospective observational study, symptoms were measured using the Memorial Symptom Assessment Scale and the Palliative care Outcomes Scale - Symptoms (renal) inventory and QOL was measured using the Short Form-36 survey. This study comprised 273 predialysis patients who had usual nephrology care and 122 nondialysis pathway patients who also attended a renal supportive care clinic adding the skills of a palliative medicine team. A further 72 patients commenced dialysis during this period without attending either clinic.

CJASN 2015

Hôpitaux Universitaires Genève

CKD in Elderly Patients Managed without Dialysis: Survival, Symptoms, and Quality of Life

Mark A. Brown,† Gemma K. Collett,* Elizabeth A. Josland,* Celine Foote,† Qiang Li,† and Frank P. Brennan**



12 mo

Figure 1. | Pathways of the 467 patients, showing the course of those who commenced in the predialysis clinic (*n*=273), those in the RSC-NFD group clinic (*n*=122), and the "other dialysis" group (*n*=72). RSC-NFD, renal supportive care not planned for dialysis.

CJASN 2015

Hôpitaux Universitaires Genève

CKD in Elderly Patients Managed without Dialysis: Survival, Symptoms, and Quality of Life

Mark A. Brown,† Gemma K. Collett,* Elizabeth A. Josland,* Celine Foote,† Qiang Li,† and Frank P. Brennan**

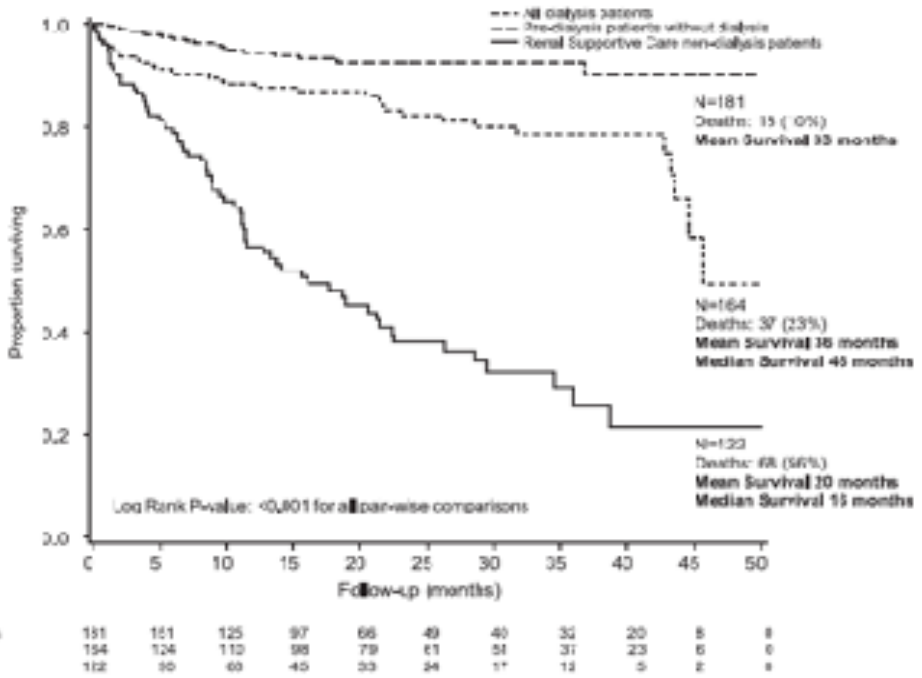


Figure 3. | Survival in patients who remained in the predialysis clinic without receiving dialysis (n=181) compared with all of those receiving dialysis in this period (n=164) and patients in the RSC-NFD group (n=122). Time zero is from first attendance at the predialysis or renal supportive care clinic after a decision had been made to pursue dialysis or not. For the "all dialysis" group, this time point includes the time at first dialysis for the 72 patients who had not attended the predialysis clinic.

Conclusions Elderly patients who choose not to have dialysis as part of shared decision making survive a median of 16 months and about one-third survive 12 months past a time when dialysis might have otherwise been indicated. Utilizing the skills of palliative medicine helps provide reasonable symptom control and QOL without dialysis.

CJASN 2015

Hôpitaux Universitaires Genève

Comparative Survival among Older Adults with Advanced Kidney Disease Managed Conservatively Versus with Dialysis

Wouter R. Verberne, A.B.M. Tom Geers,* Wilbert T. Jellema,* Dionysius H. Vincent,* Johannes J.M. van Delden,† and Willem Jan W. Bos‡*

Background and objectives Outcomes of older patients with ESRD undergoing RRT or conservative management (CM) are uncertain. Adequate survival data, specifically of older patients, are needed for proper counseling. We compared survival of older renal patients choosing either CM or RRT.

Design, setting, participants, & measurements A retrospective survival analysis was performed of a single-center cohort in a nonacademic teaching hospital in The Netherlands from 2004 to 2014. Patients with ESRD ages ≥70 years old at the time that they opted for CM or RRT were included. Patients with acute on chronic renal failure needing immediate start of dialysis were excluded.

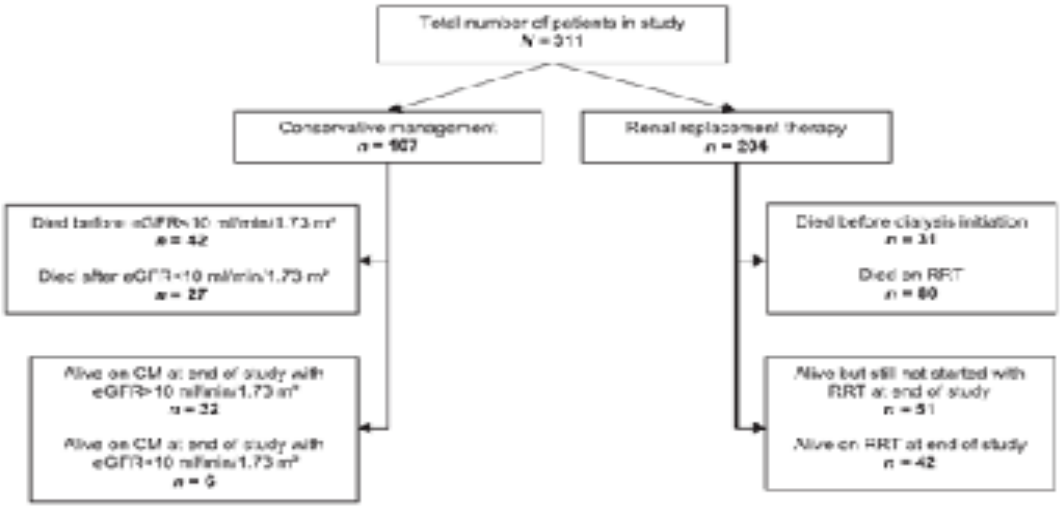


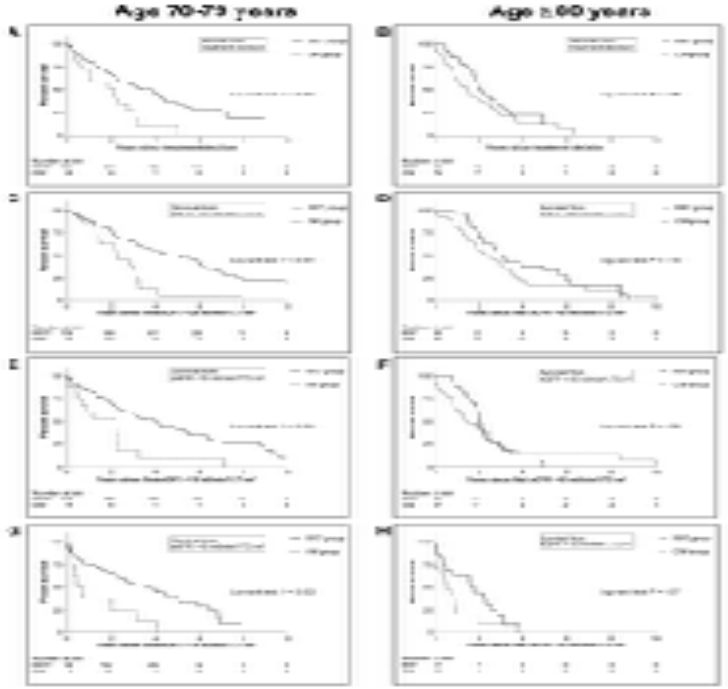
Figure 1. | Flowchart of patients and outcomes. Twelve patients who initially opted for RRT changed to conservative management (CM), and two patients who initially opted for CM changed to RRT. Analyses were performed according to the original treatment choice.

CJASN 2016

Hôpitaux Universitaires Genève

Comparative Survival among Older Adults with Advanced Kidney Disease Managed Conservatively Versus with Dialysis

Wouter R. Verberne, A.J.B.M. Tom Geers,* Wilbert T. Jellema,* Dionysius H. Vincent,* Johannes J.M. van Delden,† and Willem Jan W. Bos‡*



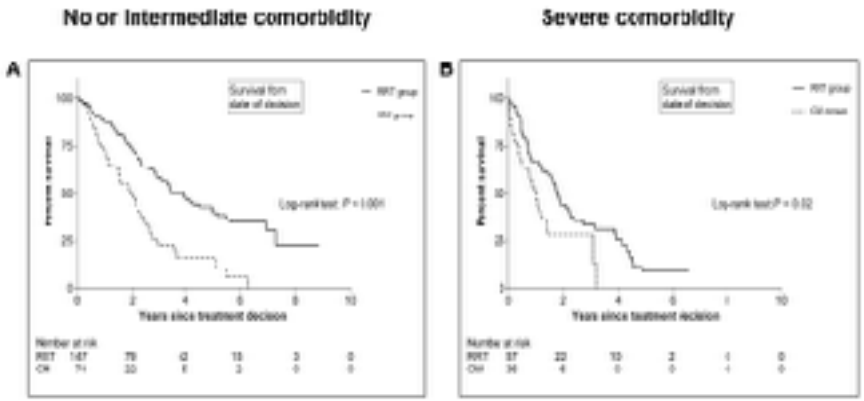


Figure 4. | Kaplan-Meier survival curves for both treatment groups ages ≥70 years old with stratification of comorbidity. (A) No and intermediate comorbidity are taken together and corresponds to Davies comorbidity scores of 0–2. (B) Severe comorbidity corresponds to Davies comorbidity scores of ≥3. Only survival calculated from time of modality choice is shown. Similar results were observed using the other starting points. CM, conservative management.

CJASN 2016

Hôpitaux Universitaires Genève

Comparative Survival among Older Adults with Advanced Kidney Disease Managed Conservatively Versus with Dialysis

Wouter R. Verberne, A.J.B.M. Tom Geers,* Wilbert T. Jellema,* Dionysius H. Vincent,* Johannes J.M. van Delden,† and Willem Jan W. Bos‡*

Table 2. Multivariate Cox proportional hazards model for survival in 311 patients ages ≥70 years old (107 patients with conservative management and 204 patients with RRT) using the time of modality choice as the starting point in survival calculation

Variable	Hazard Ratio	95% Confidence Interval	*P* Value
Age, yr	1.05	1.01 to 1.08	0.01
Davies comorbidity score (no comorbidity as reference)			<0.001
Intermediate comorbidity	1.86	1.01 to 3.52	
Severe comorbidity	4.11	2.15 to 7.85	
Treatment modality (CM versus RRT; CM as reference)	0.62	0.42 to 0.92	0.02

CM, conservative management.

Conclusions In this single-center observational study, there was no statistically significant survival advantage among patients ages ≥80 years old choosing RRT over CM. Comorbidity was associated with a lower survival advantage. This provides important information for decision making in older patients with ESRD. CM could be a reasonable alternative to RRT in selected patients.

CJASN 2016

Hôpitaux Universitaires Genève

The elderly patient on dialysis: geriatric considerations

Pooja Singh[1], Michael J. Germain[2], Lewis Cohen[3] and Mark Unruh[1]

[1]Division of Nephrology, Department of Internal Medicine, University of New Mexico, Albuquerque, NM, USA, [2]Department of Medicine, Baystate Medical Center, Tufts University School of Medicine, Springfield, MA, USA and [3]Department of Psychiatry, Baystate Medical Center, Tufts University School of Medicine, Springfield, MA, USA

- 25% des patients arrêtent la dialyse aux USA

- 90% des patients en dialyse : pas de discussion avec leurs néphrologues sur leur pronostic…
- 95% des patients auraient voulu avoir cette discussion…

- « major barrier in the management of dialysis patients- the dearth of communication between staff and patients about prognosis and EOL considerations»

NDT 2014

Hôpitaux Universitaires Genève

End-of-Life Care Preferences and Needs: Perceptions of Patients with Chronic Kidney Disease

Sara N. Davison
Department of Medicine, University of Alberta, Edmonton, Alberta, Canada

Background and objectives: Despite high mortality rates, surprisingly little research has been done to study chronic kidney disease (CKD) patients' preferences for end-of-life care. The objective of this study was to evaluate end-of-life care preferences of CKD patients to help identify gaps between current end-of-life care practice and patients' preferences and to help prioritize and guide future innovation in end-of-life care policy.

Design, setting, participants, & measurements: A total of 584 stage 4 and stage 5 CKD patients were surveyed as they presented to dialysis, transplantation, or predialysis clinics in a Canadian, university-based renal program between January and April 2008.

CJASN 2010

Hôpitaux Universitaires Genève

End-of-Life Care Preferences and Needs: Perceptions of Patients with Chronic Kidney Disease

Sara N. Davison
Department of Medicine, University of Alberta, Edmonton, Alberta, Canada

Table 3. Importance of elements related to end-of-life care from patients' perspective

Question	Extremely/Somewhat Unimportant	Unsure	Extremely/Somewhat Important	
How important is it for you to be informed about your prognosis (*i.e.*, how your illness will progress)?	6.0	2.2	90.6	←
How important is detailed information about your medical condition?	3.3	2.7	90.6	←
How important is it for you to be informed about treatment options such as withdrawing dialysis?	6.9	4.3	85.1	←
How important is it for you to have your physical symptoms (*e.g.*, pain, nausea) treated by the nephrology staff?	8.2	5.5	84.4	←
How important is it for you to be prepared and plan ahead in case of death?	5.5	7.7	83.2	←
How important is it to you to have access to information on alternative ways to manage your physical symptoms (*e.g.*, traditional medicine, new treatments, holistic care, etc.)	8.5	8.0	80.5	
How important is it to you for your family to be actively involved in medical decision making?	11.5	6.3	79.3	
How important is it for your "quality of life" responses to affect your future care?	6.7	13.2	76.1	
How important is it for you to discuss your "quality of life" regularly with our nephrology staff?	13.2	8.4	72.1	
How important is it for you to have your social, psychological, or spiritual concerns attended to by nephrology staff?	22.9	15.2	56.5	

Values are percentages. Even where data were missing, percentage was calculated out of the total number of study patients ($N = 564$).

CJASN 2010

Hôpitaux Universitaires Genève

Predicting Six-Month Mortality for Patients Who Are on Maintenance Hemodialysis

Lewis M. Cohen,* Robin Ruthazer,† Alvin H. Moss,‡ and Michael J. Germain§

Background and objectives: Prognostic information is rarely conveyed by nephrologists because of clinical uncertainty about accuracy. The objective of this study was to develop an integrated prognostic model of 6-mo survival for patients who receive hemodialysis (HD).

Design, setting, participants, & measurements: A short-term prognostic model was developed using prospective data from a derivation cohort of 512 patients who were receiving HD at five dialysis clinics. Patient charts were reviewed for actuarial predictors (*e.g.*, Charlson Comorbidity), and nephrologists answered the "surprise" question (SQ), "Would I be surprised if this patient died within the next 6 mo?" Survival was monitored for up to 24 mo. The prognostic model was tested with a validation cohort of 514 patients from eight clinics.

Table 3. Multivariable model of survival in the derivation cohort (*n* 419 patients with complete data, 103 died)

Variable*	HR	95% CI
SQ, not surprised *versus* surprised	2.71	1.75 to 4.17
Albumin (HR expressed for a 1-U increase)	0.27	0.15 to 0.50
Age (yr; HR expressed for a 10-yr increase)	1.36	1.17 to 1.57
PVD, yes *versus* no	1.88	1.24 to 2.84
Dementia, yes *versus* no	2.24	1.11 to 4.48

*The age range for model development was 16 to 92; albumin range was 1.7 to 5.0. This model should not be applied to cases with ages or albumin values beyond these ranges. Albumin values <3.0 were recoded to 3.0 and values >4.5 were recoded to 4.5 for the model derivation.

CJASN 2010

Hôpitaux Universitaires Genève

Predicting Six-Month Mortality for Patients Who Are on Maintenance Hemodialysis

Lewis M. Cohen,* Robin Ruthazer,† Alvin H. Moss,‡ and Michael J. Germain§

The validation cohort's AUC was determined, and predicted and observed mortalities were compared. Predicted mortalities were calculated using the parameter estimates from the Cox model in conjunction with each patient's individual covariate values and the underlying baseline survival (survival function for a hypothetical patient with all covariates having a value of 0) to compute a predicted survival at any time by using the formula predicted survival at time $t = [S_0(t)]^{\exp(x\beta)}$ where $S_0(t)$ is baseline survival estimate from the derivation data at time t from the Cox multivariable model and $x\beta$ is the linear combination of parameter estimates multiplied by their covariate values or predicted index of risk. Predicted and

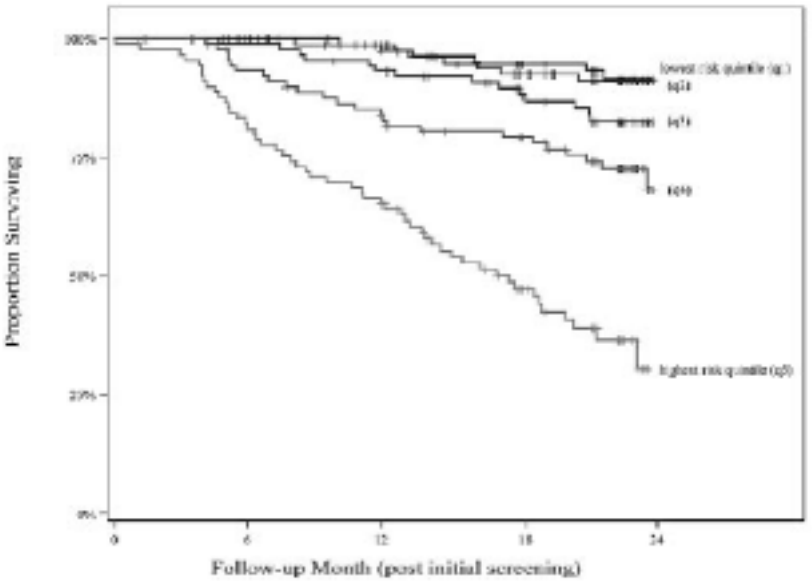


Figure 2. Survival across quartiles of predicted risk. The model successfully predicted which patients had worse and better survival over time with patients in quintile 5 (q5)—the highest risk quartile—having the poorest survival and patients in q1—the highest quartile—having the best survival. The survival in q5 was significantly worse than all other quintiles pooled together (log-rank test $P < 0.0001$).

The AUC for 6-mo survival in the derivation cohort using this integrated prognostic model was 0.87 (95% CI 0.82 to 0.92). The AUCs for 12- and 18-mo survival were 0.82 (95% CI 0.76 to 0.88) and 0.79 (95% CI 0.73 to 0.86), respectively, and the overall AUC area for this model across all time, based on Somers Dxy, was 0.77 (95% CI 0.72 to 0.82).

Conclusions: An integrated 6-mo prognostic tool was developed and validated for the HD population. The instrument may be of value for researchers and clinicians to improve end-of-life care by providing more accurate prognostic information.

CJASN 2010

Hôpitaux Universitaires Genève

Revised Dialysis Clinical Practice Guideline Promotes More Informed Decision-Making

Alvin H. Moss
West Virginia University Center for Health Ethics and Law, Morgantown, West Virginia

RPA-ASN guidelines 2000
«Shared Decision-Making in the appropriate initiation of and withdrawal from dialysis»

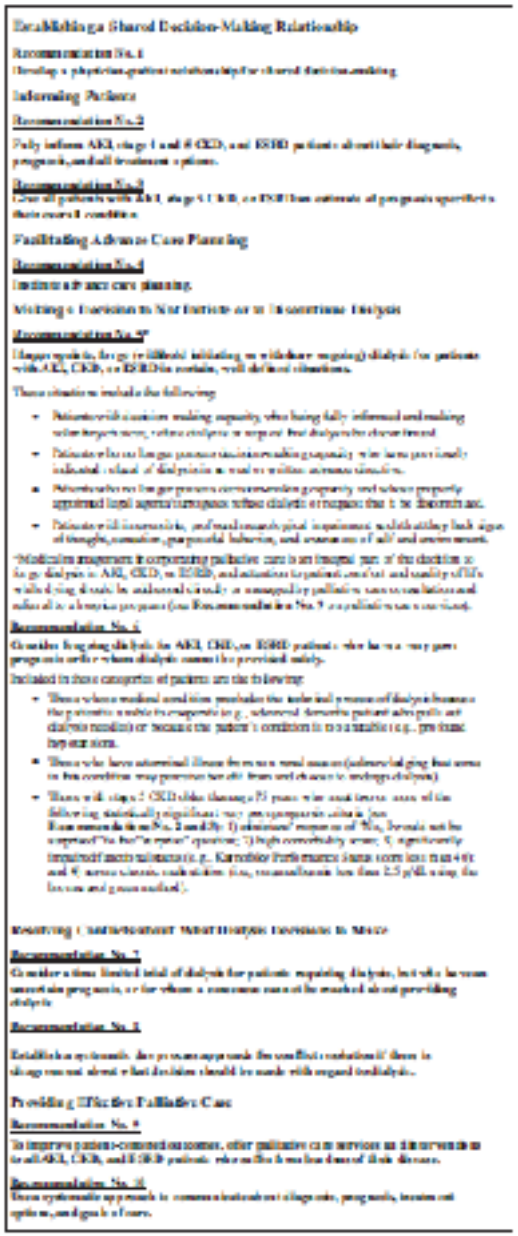


Figure 1. Summary of adult patient recommendations.

CJASN 2010

Hôpitaux Universitaires Genève

Revised Dialysis Clinical Practice Guideline Promotes More Informed Decision-Making

Alvin H. Moss
West Virginia University Center for Health Ethics and Law, Morgantown, West Virginia

Recommendation No. 2

Fully inform AKI, stage 4 and 5 CKD, and ESRD patients about their diagnosis, prognosis, and all treatment options.

Recommendation No. 3

Give all patients with AKI, stage 5 CKD, or ESRD an estimate of prognosis specific to their overall condition.

Recommendation No. 6

Consider forgoing dialysis for AKI, CKD, or ESRD patients who have a very poor prognosis or for whom dialysis cannot be provided safely.

Included in these categories of patients are the following:

- Those whose medical condition precludes the technical process of dialysis because the patient is unable to cooperate (e.g., advanced dementia patient who pulls out dialysis needles) or because the patient's condition is too unstable (e.g., profound hypotension).
- Those who have a terminal illness from non-renal causes (acknowledging that some in this condition may perceive benefit from and choose to undergo dialysis).
- Those with stage 5 CKD older than age 75 years who meet two or more of the following statistically significant very poor prognosis criteria (see **Recommendations No. 2 and 3**): 1) clinicians' response of "No, I would not be surprised" to the "surprise" question; 2) high comorbidity score; 3) significantly impaired functional status (e.g., Karnofsky Performance Status score less than 40); and 4) severe chronic malnutrition (i.e., serum albumin less than 2.5 g/dL using the bromeresol green method).

CJASN 2010

Hôpitaux Universitaires Genève

Treatment of End-stage Kidney Failure without Renal Replacement Therapy

Barnaby Hole,* Sarah Tonkin-Crine,† Fergus J. Caskey,‡ and Paul Roderick§
*Department of Renal Medicine, North Bristol NHS Trust, Southmead Hospital, Bristol, United Kingdom; †Nuffield Department of Primary Care Health Sciences, University of Oxford, Oxford, United Kingdom; ‡UK Renal Registry, Learning and Research, Southmead Hospital, Bristol and School of Social and Community Medicine, University of Bristol, Bristol, United Kingdom; and §Academic Unit of Primary Care and Population Sciences, Faculty of Medicine, University of Southampton and the University Hospital Southampton NHS Trust, Southampton, United Kingdom

TABLE 1. Definition of comprehensive conservative care (CCC) following the KDIGO Controversies Conference on supportive care in chronic kidney disease (18)

CCC is planned holistic patient-centered care for patients with CKD stage five including the following

- Interventions to delay progression of kidney disease and minimize adverse events or complications
- Shared decision-making
- Active symptom management
- Detailed communication including advance care planning
- Psychological support
- Social and family support
- Cultural and spiritual domains of care

CCC care does not include dialysis.
CKD, chronic kidney disease.

KI 2015

Treatment of End-stage Kidney Failure without Renal Replacement Therapy

Barnaby Hole,* Sarah Tonkin-Crine,† Fergus J. Caskey,‡ and Paul Roderick§
*Department of Renal Medicine, North Bristol NHS Trust, Southmead Hospital, Bristol, United Kingdom, †Nuffield Department of Primary Care Health Sciences, University of Oxford, Oxford, United Kingdom, ‡UK Renal Registry, Learning and Research, Southmead Hospital, Bristol and School of Social and Community Medicine, University of Bristol, Bristol, United Kingdom, and §Academic Unit of Primary Care and Population Sciences, Faculty of Medicine, University of Southampton and the University Hospital Southampton NHS Trust, Southampton, United Kingdom

Pourquoi les patients âgés ne choisissent pas la dialyse ?

-Impact sur qualité de vie
-Déplacements : fatigue et coûts
-Surcharge sur proche-aidants
-Pas de désir de continuer à vivre autrement après vie bien « remplie »

Treatment of End-stage Kidney Failure without Renal Replacement Therapy

Barnaby Hole,* Sarah Tonkin-Crine,† Fergus J. Caskey,‡ and Paul Roderick§
*Department of Renal Medicine, North Bristol NHS Trust, Southmead Hospital, Bristol, United Kingdom; †Nuffield Department of Primary Care Health Sciences, University of Oxford, Oxford, United Kingdom; ‡UK Renal Registry, Learning and Research, Southmead Hospital, Bristol and §School of Social and Community Medicine, University of Bristol, Bristol, United Kingdom; and ||Academic Unit of Primary Care and Population Sciences, Faculty of Medicine, University of Southampton and the University Hospital Southampton NHS Trust, Southampton, United Kingdom

Compared with patients of the same age receiving dialysis, there was a survival disadvantage associated with nondialysis care, but this diminished and even disappeared when comparison was restricted to patients with high comorbidity or on multivariate analysis (40,43–46), though this was not found in all studies (38,47). Patients receiving nondialysis care were more likely to die out of hospital, with palliative care input, and less likely to have an 'over-medicalised' death (41,43,45,48).

4. The viability of a trial comparing the effectiveness and cost-effectiveness of nondialysis and RRT care pathways in individuals where clinical equipoise exists should be investigated. While practical and ethical intricacies make this challenging, observational data may never be able to separate unmeasured confounding by indication from treatment effect.
5. Working with colleagues in primary care and palliative medicine, the renal community must continue to strive to improve dialysis outcomes for older patients and those with multiple comorbidities, including greater use of home and assisted therapies. The benefits and risks of RRT are not fixed and whatever evidence is generated regarding nondialysis pathways will need to keep pace with advances in practice.

En résumé

Chez les personnes > 80 ans en IRC stade V :

- Discussion impérative avec le patient et son entourage sur son pronostic en tenant compte:

-présence de comorbidités sévères, -score de Karnovsky, **-mise en dialyse en urgence**, -score de prédiction (avec question surprise)

- Cette discussion doit impliquer les soignants (et doit précéder le cas échéant l'éducation thérapeutique en prédialyse)

- Si pronostic (très) défavorable , privilégier «comprehensive care»

- Rôle de la DP assistée à domicile à mieux étudier chez ces patients

Practice Change Is Needed for Dialysis Decision Making with Older Adults with Advanced Kidney Disease

Jennifer S. Scherer[*] *and Alvin H. Moss*[†]

Clin J Am Soc Nephrol 11: ●●● ●●●, 2016. doi: 10.2215/CJN.08770816

Hôpitaux Universitaires Genève