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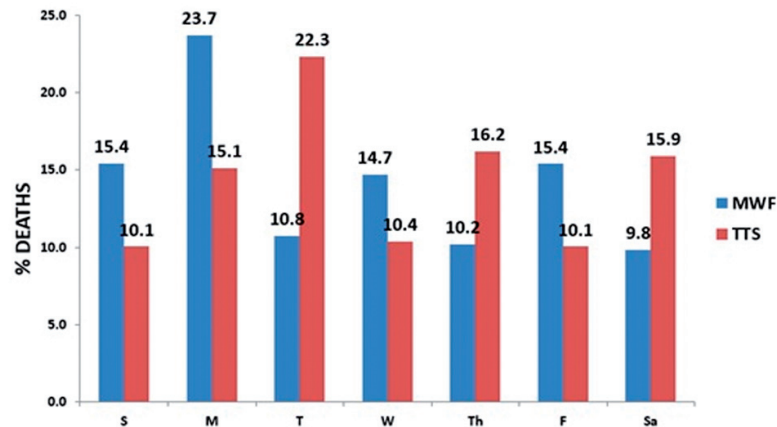
DIALYSIS SCHEDULE AND DAY-OF-WEEK MORTALITY IN A NATIONAL DIALYSIS COHORT

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INTRODUCTION AND AIMS: In the United States (US), maintenance hemodialysis is typically prescribed as thrice-weekly treatments with two one-day and one two-day intervals between sessions. Given their impaired ability to excrete electrolytes, fluid,



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and uremic solutes, hemodialysis patients may have limited reserve to tolerate deviations in metabolic and volume status associated with the long two-day interdialytic interval.

METHODS: We examined patients receiving hemodialysis from a large national dialysis organization in the US from 2007-2011 who were on a stable thrice-weekly hemodialysis schedule. We compared all-cause mortality by day-of-week among patients receiving hemodialysis on a Monday-Wednesday-Friday (MWF) vs. Tuesday-Thursday-Saturday (TTS) schedule.

RESULTS: Among 105,120 patients who met eligibility criteria, 61,152 and 43,968 patients received hemodialysis on a MWF vs. TTS schedule (**Table**). In the overall cohort, the mean \pm SD age was 64 ± 15 years, among whom 43% were female, 30% were African-American, 16% were Hispanic, and 53% had diabetes mellitus. Among patients receiving hemodialysis on a MWF schedule, the highest proportion of deaths was observed on the day after the long two-day interdialytic interval, followed by hemodialysis days after the one-day interval: 23.7%, 14.7%, and 15.4% deaths on Mondays, Wednesdays, and Fridays, respectively (**Figure**). A similar pattern was observed among patients receiving hemodialysis on a TTS schedule, such that the highest proportion of deaths was observed on the day after the long two-day interval, followed by hemodialysis days after the one-day interval: 22.3%, 16.2%, and 15.9%, respectively.

CONCLUSIONS: Among patients receiving hemodialysis on a stable thrice-weekly schedule, the greatest proportion of deaths occurred on Mondays and Tuesdays after the long two-day interval. Further studies are needed to determine the factors implicated in the intensified mortality of the long interdialytic interval, including the excess accumulation of fluid, potassium, and/or uremic toxins, their removal with dialysis, and/or a weekend “lag” effect (i.e., reduced access to medical care or deferring medical services during the weekend).

CHARACTERISTICS AT TIME OF DEATH OR CENSORING			
	OVERALL	MWF SCHEDULE	TTS SCHEDULE
N	105,120	61,152	43,968
Age, yrs (mean \pm SD)	64 \pm 15	63 \pm 15	64 \pm 15
Female (%)	43	42	43
Race/ethnicity (%)			
White	47	49	45
Black	30	29	31
Other	24	23	25
Vintage, months (mean \pm SD)	21.2 \pm 16.9	22.2 \pm 17.0	19.7 \pm 16.7
Access (%)			
CVC	26	25	28
AVF/AVG/AV other	60	63	56
Missing/unknown	14	12	16
Diabetes (%)	53	53	52
CHF (%)	12	12	13
Charlson Comorbid Index (median [IQR])	5.0 (4.0, 6.0)	5.0 (4.0, 6.0)	5.0 (4.0, 6.0)
Dialysis Treatment Characteristics (median [IQR])			
Mean session length, min	210 (187, 228)	210 (187, 229)	210 (188, 228)
Mean interdialytic weight gain, kg	2.3 (1.6, 3.0)	2.3 (1.6, 3.1)	2.2 (1.5, 3.0)
Laboratory Tests (median [IQR])			
Potassium, mEq/L	4.6 (4.2, 5.0)	4.6 (4.2, 5.0)	4.6 (4.2, 5.0)
Bicarbonate, mEq/L	24 (22, 26)	24 (22, 26)	24 (22, 26)
Phosphorus, mg/dl	4.8 (4.0, 5.7)	4.8 (4.0, 5.7)	4.8 (4.0, 5.7)
spKt/V	1.5 (1.4, 1.7)	1.5 (1.4, 1.7)	1.5 (1.3, 1.7)

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