

# Body Mass Index (BMI) and Survival in Polycystic Kidney Disease (PKD) Hemodialysis (HD) Patients

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## Background

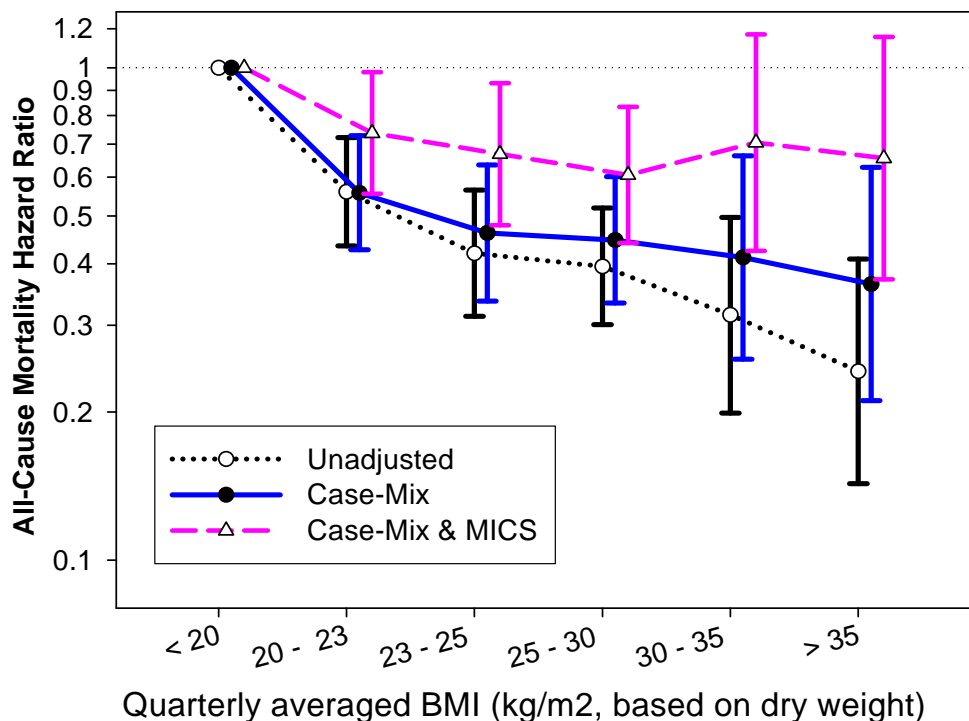
- Higher body mass index (BMI), even to levels of obesity, may be associated with greater survival in dialysis patients.
- We hypothesized that this relationship may also hold in polycystic kidney disease (PKD) hemodialysis (HD) patients and examined the 3-yr (7/2001-6/2004) survival of 1,596 PKD patients in DaVita® dialysis clinics across the United States

## Methods

- We used both baseline & time-dependent Cox models, adjusted for case-mix & malnutrition-inflammation-cachexia syndrome (MICS)
- The 3-yr death hazard ratios (HR) (and 95% confidence levels) of the BMI increments based on 3-month averaged post-HD dry weight) were calculated
  - <20 kg/m<sup>2</sup> [reference]
  - 20-23 kg/m<sup>2</sup>
  - 23-25 kg/m<sup>2</sup>
  - 25-30 kg/m<sup>2</sup>
  - 30-35 kg/m<sup>2</sup>
  - ≥35 kg/m<sup>2</sup>

## Results

	Baseline			Case-mix			MICS		
	P-value	HR	95% CI	P-value	HR	95% CI	P-value	HR	95% CI
<20	<.0001	0.56	0.43 - 0.72	<.0001	<b>0.55</b>	0.42 - 0.72	0.03	<b>0.73</b>	0.55 - 0.98
20 - <23	<.0001	0.42	0.31 - 0.56	<.0001	<b>0.46</b>	0.33 - 0.63	0.01	<b>0.66</b>	0.47 - 0.93
23 - <25	<.0001	0.39	0.30 - 0.51	<.0001	<b>0.44</b>	0.33 - 0.60	0.00	<b>0.60</b>	0.44 - 0.83
25 - <30	<.0001	0.31	0.19 - 0.49	<.0001	<b>0.41</b>	0.25 - 0.66	0.17	<b>0.70</b>	0.42 - 1.16
≥30	<.0001	0.24	0.14 - 0.40	<.0001	<b>0.36</b>	0.21 - 0.62	0.14	<b>0.65</b>	0.37 - 1.15



- In time-dependent case-mix adjusted models, survival was linearly superior across BMI increments (see Figure)
- In MICS models, the greatest survival was associated with BMI in 25-30 kg/m<sup>2</sup>: HR 0.5 (95% CI: 0.3-0.6). Death risk of BMI ≥35 kg/m<sup>2</sup> (morbid obesity) after adjustment for case-mix was 0.6 (0.4-0.8) but after additional adjustment for MICS was 0.7 (0.4-1.2)

## Conclusions

Hence, in PKD HD pts, higher BMI up to 30 kg/m<sup>2</sup> in each calendar quarter is independently associated with greater survival.

The survival advantage of BMI ≥30 is probably related to better nutritional and inflammatory profiles.

Obesity (BMI ≥30 kg/m<sup>2</sup>) per se does not appear to offer greater survival in PKD.

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