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Beta(β)-blockade in Hemodialysis Patients

NDT 2020: doi: 10.1093/ndt/gfaa058

CKJ 2021: doi: 10.1093/ckj/sfaa248

JASN 2015: doi: 10.1681/ASN.2014040324



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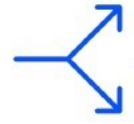


- β -blockers reduce cardiac events in non-dialysis CKD patients
- β -blockers are dialyzable & cardioselective \rightarrow ? benefit in dialysis patients



Compare β -blockers of variable **dialyzability** and **β_1 -selectivity** in reducing cardiac events

Prospective



atenolol, acebutolol,
metoprolol, *bisoprolol
versus
betaxolol, *carvedilol,
propranolol

n = 15,699
n = 20,904

2 years

All-Cause Mortality



*bisoprolol < *carvedilol
HR 0.82 (95% CI, 0.75-0.88)

Major Adverse Cardiac Events



heart \uparrow attack + heart failure + stroke
*bisoprolol < *carvedilol
HR 0.89 (95% CI, 0.84-0.93)

Prospective



bisoprolol
versus
carvedilol

n = 9,305
n = 11,171

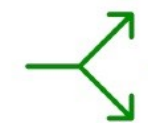
180 days

bisoprolol < carvedilol
HR 0.65 (95% CI, 0.58-0.72)



bisoprolol < carvedilol
HR 0.83 (95% CI, 0.78-0.89)

Retrospective

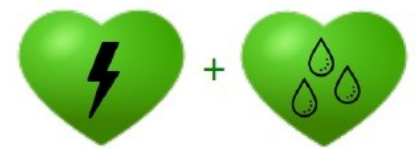


propranolol,
*bisoprolol
versus
atenolol, acebutolol,
*metoprolol

n = 3,294
n = 3,294

* > 50% in the cohort

*metoprolol > *bisoprolol
RR 1.4 (95% CI, 1.1-1.8)



No significant differences
between cohorts

Incident use of β -blocker

Secondary Outcomes



- Not all β -blockers provide the same level of protection | Cardioselective β -blockers, like **bisoprolol**, appear to offer the best protection