Bakris GL, Burkhart JM, Weinhandl ED, McCullough PA, Kraus MA. Intensive Hemodialysis, Blood Pressure, and Antihypertensive Medication Use. *American Journal of Kidney Diseases, Volume 68, Issue 5, S15 - S23.*

Intensive hemodialysis improves blood pressure control and reduces need for antihypertensive agents

Persistent hypertension is a vexing problem in the care of dialysis patients[1]. Perennially, blood pressures over 140/90 are the second leading cause of kidney failure in the U.S.[2] Antihypertensive medications are widely used and polypharmacy is common, but pharmacologic intervention is often unsuccessful at lowering blood pressure to normotensive levels.[3]

Topics discussed in this summary include:

- Blood pressure control
- Antihypertensive agents prescribed

Trials have shown intensive hemodialysis reduces blood pressure

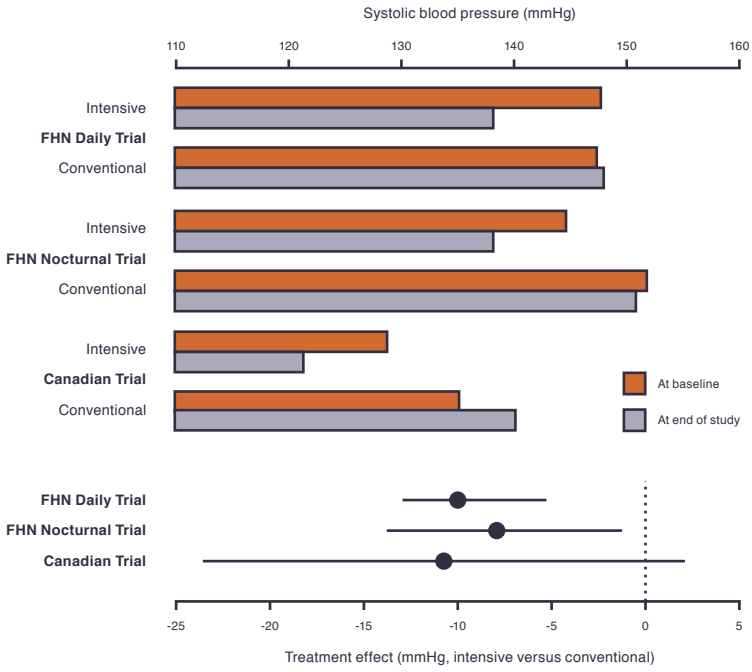
- In the Daily Trial of the Frequent Hemodialysis Network, intensive hemodialysis reduced pre-dialysis Systolic Blood Pressure (SBP) by 7.7 mmHg, relative to three sessions per week.[4]
- In the Nocturnal Trial of the Frequent Hemodialysis Network, intensive dialysis reduced pre-dialysis SBP by 7.3 mmHg, relative to three sessions per week, a finding also reported in an earlier Canadian trial.[4,5]

Trials and prospective cohort studies alike have shown that intensive hemodialysis reduces the need for antihypertensive medications

- Both intensive schedules in the Frequent Hemodialysis Network reduced antihypertensive medication use, relative to three sessions per week.[4]
- In the Following Rehabilitation, Economics, and Everyday Dialysis Outcomes Measurements (FREEDOM) Study of short daily hemodialysis, the mean number of prescribed antihypertensive agents decreased from 1.7 to 1.0 in one year, while the percentage of patients not prescribed antihypertensive agents increased from 21% to 47%.[6]

CHAPTER 2, FIGURE 2:[3]

Effects of intensive versus conventional hemodialysis on pre-dialysis systolic blood pressure in the FHN Daily Trial,[4] the FHN Nocturnal Trial,[4] and the Canadian trial of nocturnal hemodialysis.[5] Estimated treatment effects (solid dots) and associated 95% confidence intervals (solid lines) are displayed at the bottom.



Conclusion

Multiple randomized and prospective cohort studies demonstrate that intensive hemodialysis significantly lowers pre-dialysis blood pressure and reduces the need for antihypertensive medications. By lowering blood pressure, intensive hemodialysis may improve cardiovascular outcomes.

All forms of hemodialysis, including treatments performed in-center and at home, involve some risks. In addition, there are certain risks unique to treatment in the home environment. Patients differ and not everyone will experience the reported benefits of more frequent hemodialysis.

Certain risks associated with hemodialysis treatment are increased when performing nocturnal therapy due to the length of treatment time and because therapy is performed while the patient and care partner are sleeping.

About this review

This summary is from a six-part series on intensive hemodialysis, covering the impact of intensive hemodialysis on cardiovascular disease, hypertension, mineral and bone disease, health-related quality of life, treatment tolerability, and potential risks. It was originally published as a supplement in the November 2016 issue of the *American Journal of Kidney Disease*.

For details, methodology, and full references for this summary—as well as the other topics in the series—visit **AdvancingDialysis.org**.

AdvancingDialysis.org is dedicated to providing clinicians and patients with better access to and more awareness of the reported clinical benefits and improved quality of life made possible with home dialysis, including more frequent, more intensive, and nocturnal therapy schedules.

AdvancingDialysis.org is a project of NxStage Medical, Inc.

References

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