

Review of Blood Pressure (BP) Control and Home BP Monitoring in our Haemodialysis Cohort

H Edwards, Q Tan, A Bhanji
Wessex Kidney Centre, Portsmouth

Introduction

Hypertension is a common problem in the haemodialysis (HD) patient and can be difficult to assess and control. In the general population, the National Institute of Clinical Excellence (NICE) guidelines have recommended the use of ambulatory or home blood pressure monitoring since 2011¹. However, this has not been recognised for HD patients. Recent publications have now proposed the use of home blood pressure readings as a more accurate measurement tool²; however the benefit of home blood pressure measurements in HD patients have only been shown in studies with small sample size.

Aims

1. Analyse the adequacy of blood pressure control in HD patients compared to recommended targets set by Kidney Disease Improving Global Outcomes (KDIGO)³.
2. Compare home blood pressure readings with in-centre pre- and post-HD blood pressure readings; and compare with the recommended targets set by the American Heart Association (AHA)⁴.

Methods

Retrospective data was collected from all our in-centre HD patients in our unit. Patients on home HD were excluded. Data was collected from the haemodialysis database. Average blood pressure readings for both pre- and post-HD were calculated based on five consecutive readings. A number of these patients were then asked to measure their home blood pressure on the three days between HD sessions.

Results

Haemodialysis Blood Pressures

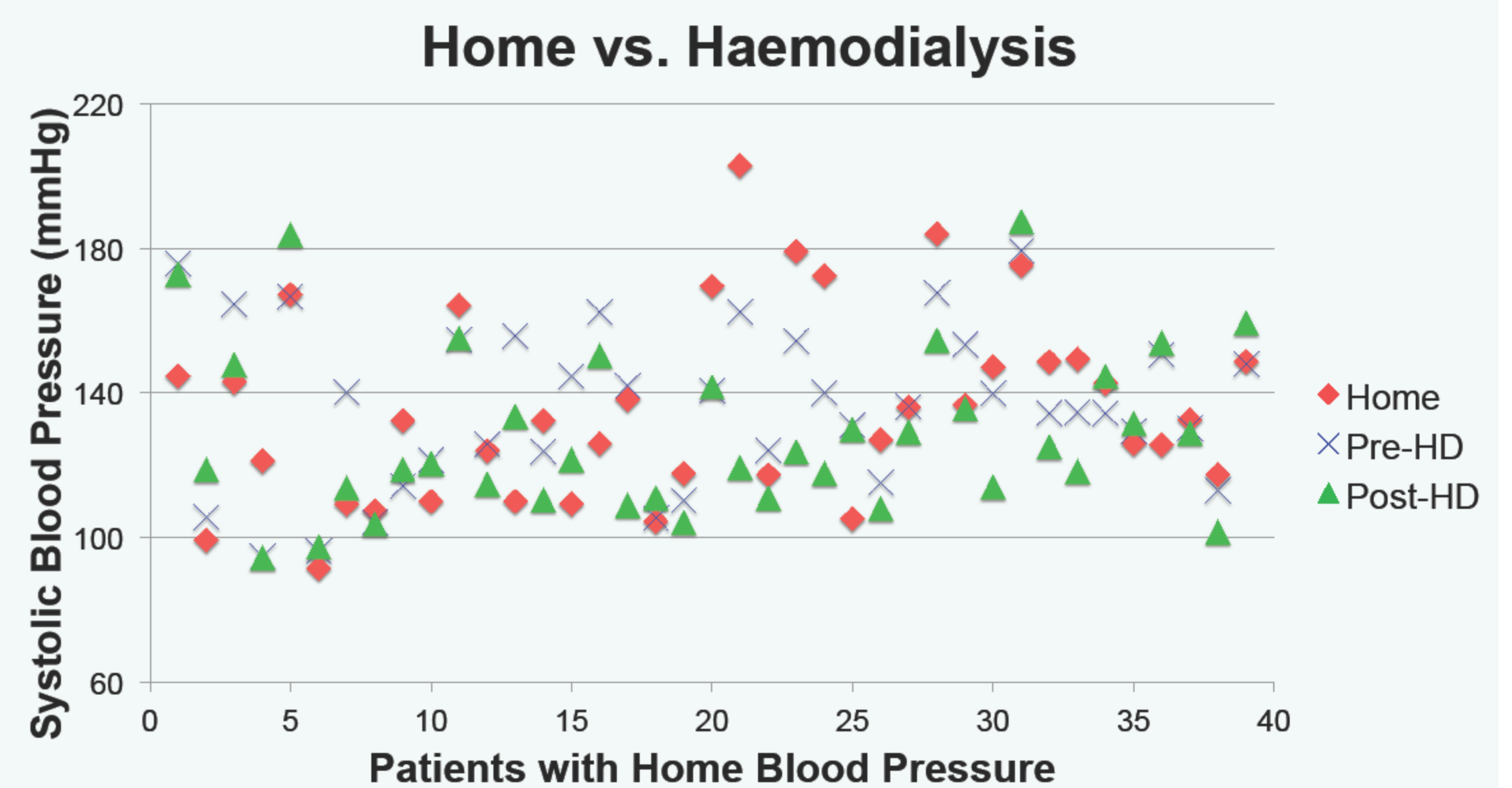
There were 598 patients on HD with a median age of 69 years, with 385 (65.0%) male patients. 201 (33.6%) patients were diabetic. There were 208 (34.8%) patients on no anti-hypertensive medication.

Mean pre-HD blood pressure was 141/75mmHg with 272 (45.5%) patients achieving the recommended target of <140/90mmHg. Mean post-HD blood pressure was 134/68mmHg with 251 (42.0%) patients achieving the target of <130/80mmHg.

Home Blood Pressures

There were 39 patients with home blood pressure readings. 15 (38.5%) patients were not on anti-hypertensive medications. Mean home blood pressure was 134/68mmHg with 21 (53.8%) patients achieving the recommended target of <135/85mmHg.

There was no significant difference between home, pre- and post-HD systolic blood pressure readings (p=0.132).



Blood Pressure	Mean ± SD (mmHg)
Home systolic	135.73 ± 26.1
Pre-dialysis systolic	136.59 ± 22.06
Post-dialysis systolic	128.69 ± 22.89

Conclusions

1. Our data showed that less than half of our patients are currently achieving the KDIGO target for blood pressure control. Despite this, a significant proportion of our patients are not on any anti-hypertensive agents.
2. Furthermore, there was no significant difference between home and HD blood pressure readings. This suggests that, until further evidence is available, our in-centre HD blood pressure readings are a reasonable marker of blood pressure control and should be used.
3. The limitations of our data include a reliance on patients having their own blood pressure machine, compliance in recording BP and small sample size. We aim to expand this further.

References

- 1 National Institute for Health and Care Excellence (NICE) Guideline (CG127), August 2011
- 2 Agrawal R. et al., Assessment and Management of Hypertension in Patients on Dialysis. J Am Soc Nephrol 25:1630-1646, 2014
- 3 K/DOQI Workgroup: K/DOQI Clinical Practical Guidelines for Cardiovascular Disease in Dialysis Patients. Am J Kidney Dis 45 (Suppl 3): S1-S153, 2005
- 4 Pickering T et al, Call to action on use and reimbursement for home blood pressure monitoring: A joint scientific statement from the American Heart Association, American Society of Hypertension, and Preventive Cardiovascular Nurses Association. Hypertension 52: 10-29, 2008

