‘Research Round Up- Prescribing in Hypertension

Introduction

The last research round up provided you with an overview of articles looking at prescribing in sexual and reproductive health. This month we will be reviewing prescribing practices in hypertension. Hypertension is a commonly prescribed for condition in primary and secondary care in the UK with a wide range of prescribers who manage this condition as part of their scope of practice. According to the UK Government and Public Health England Guidance (PHE 2017) the condition affects more than 1 in 4 adults in England. Prevention and early detection leading to prompt treatment are goals to help reduce premature deaths from the condition. It is important as a prescriber to be aware factors influencing hypertension and of modifiable and non-modifiable variants. It is also important to look at comorbidities when prescribing. The following articles cover three areas of prescribing in hypertension.

Prescribing Patterns of Antihypertensive Agents and Blood Pressure Control Among Patients with Incident Stage 2 Hypertension

M. V. Helms, A. L. Edwards, T. H. Suszynsky, & A. Y. Hwang (2022) *Prescribing Patterns of Antihypertensive Agents and Blood Pressure Control Among Patients with Incident Stage 2 Hypertension*. Journal of Pharmacy Technology: 1-6.

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This retrospective cohort analysis published in the Journal of Pharmacy Technology in 2022 aimed to describe prescribing patterns of antihypertensive medications in patients with incident stage 2 hypertension. The researchers also wanted to determine any association of blood pressure control with initial prescriptions of multi drug regimes. Stage 2 hypertension is defined as a presenting systolic blood pressure of > 160mmHg and/or a diastolic blood pressure of >100mmHg. Guidelines suggest that appropriate treatment is crucial in preventing secondary events that contribute to morbidity and mortality. These guidelines suggest dual pharmacological therapy is necessary. The researchers aim was to examine adherence to these guidelines to inform the evidence base.

Data was collected from the electronic medical records of six primary care clinics between January 2014 and June 2019. Inclusion criteria were patients ≥18 years with an initial diagnosis of stage 2 hypertension. The primary analysis was to identify prescribing patterns of antihypertensive agents among patients with incident stage 2 hypertension. A secondary measure was to investigate blood pressure control (<140/90 mm Hg) at three months after diagnosis.

The search yielded 261 patients who met the inclusion criteria (mean age, 52 years; 53.2% males; mean baseline BP, 162.1/100.1 mm Hg). Of these 261, 72% of were started on monotherapy, with the most common being angiotensin receptor blockers (ARBs; 25.7%) and angiotensin-converting-enzyme (ACE) inhibitors (24.6%). Commonly initiated dual therapy was ACE-inhibitor + thiazide-like diuretic (52.7%), followed by an ARB + thiazide-like diuretic (21.6%). This dual therapy was associated with improved BP control at three months.

The researchers conclude that the majority of patients diagnosed with incident stage 2 hypertension were prescribed initial single antihypertensive therapy, though better BP control at three months was seen among those initiated on multi-antihypertensive therapy. They suggest that dual therapy along with early pharmacological intervention was important.

Differences in Hypertension Medication Prescribing for Black Americans and Their Association with Hypertension Outcomes

H. K. Holt, G Gildengorin, L Karliner, V Fontil, R Pramanik, & M.B. Potter (2022) *Differences in Hypertension Medication Prescribing for Black Americans and Their Association with Hypertension Outcomes*: J Am Board Fam Med;35:26–34

<https://www.jabfm.org/content/jabfp/35/1/26.full.pdf>

This retrospective observational cohort study was published in the Journal of the American Board of Family Medicine in 2022. The researchers collected electronic health data from three health systems in the San Francisco Bay are of California, USA. This consisted of data form 31 primary care clinics and included all patients between the ages of 18 and 85 years. Inclusion criteria included a diagnosis of hypertension and at least one clinic visit during the period between 2013-15 or 2014-16 dependent on clinic. Initial exclusion criteria during data extraction were pregnancy-related hypertension and end stage renal disease. This criterion yielded 10,875 patients. The aim of the researchers was to ascertain if the national guideline recommendations for management of hypertension without comorbidities for Black/African Americans influenced prescription patterns in this population. A further aim was to identify differences in uncontrolled hypertension in this population who were on different medication regimens. The medication regimens of interest were one or two drug combinations, including angiotensin-converting enzyme inhibitors (ACE), angiotensin receptor blockers (ARB), thiazide diuretics, or calcium channel blockers (CCB).

Results showed that 20.6% of the population of 10,875 patients were identified as Black/African Americans. Of this group, 46.4% of had uncontrolled hypertension (≥140/90 mmHg) compared with 39.0% of non-Black/African Americans (P < .001). 61.8% of Black/African Americans were treated with 1-drug compared with 68.4% of non- Black/African Americans.

Further analysis of the medications prescribed revealed that of the group of Black/African Americans on monotherapy: 41.3% were on thiazide diuretics, 40.1% on CCB, and 18.6% on ACE/ARB. Of non- Black/African Americans on monotherapy, 27.7% were on thiazide diuretics, 30.1% were on CCB, and 42.3% were on ACE/ARB. Of Black/African Americans patients on 1 drug, 45.2% had uncontrolled hypertension compared with 38.0% of non- Black/African Americans (P < .001). Of Black/African Americans on 2 drugs, 48.2% had uncontrolled hypertension compared with 41.1% non- Black/African Americans (P < .001). For each drug regimen, there was more variation in hypertension control within each group than between Black/African Americans and non- Black/African Americans.

The authors concluded that prescribers do seem to be following race-based guidelines for hypertension, however blood pressure control for Black/African Americans remains worse than in the general population. They suggest that a patient centred and individualised approach to prescribing in hypertension may be more important that rigorous adherence to race based guidelines.

Use of lifestyle interventions in primary care for individuals with newly diagnosed hypertension, hyperlipidaemia or obesity: a retrospective cohort study

J M Lemp , M Prasad Nuthanapati , T W Barnighausen, S Vollmer , P Geldsetzer, & A Jani (2022) *Use of lifestyle interventions in primary care for individuals with newly diagnosed hypertension, hyperlipidaemia or obesity: a retrospective cohort study*. Journal of the Royal Society of Medicine. 0(-), 1-11.

<https://journals.sagepub.com/doi/pdf/10.1177/01410768221077381>

This retrospective cohort study conducted in an English primary care setting was published in the Journal of the Royal Society of Medicine this year. It took data from the UK Clinical Practice Research Datalink with the aim of investigating the recording of lifestyle factors known to influence cardiovascular disease risk in patients primary care electronic records. The search of the database yielded 770,771 patients who had been given a new diagnosis of hypertension, hyperlipidaemia or obesity between 2010 and 2019. The search was restricted to patients aged 18 or older. The authors acknowledge that lifestyle interventions can be effective in reducing cardiovascular disease risk but were aiming to increase the evidence of the use of these interventions which are first line recommendations in England as recent information in the literature on this was lacking. The main outcome measure sought by the investigation was the recording of lifestyle interventions as well as any commencement of medication in the 12 months prior to diagnosis and the 12 months following diagnosis.

The analysis of the findings showed a variance in results across the three conditions of interest. While 55.6% of individuals with an initial diagnosis of hypertension were recorded as having lifestyle support (lifestyle intervention and/or signposting) within the 2-year timeframe, this number was reduced to 45.2% for those diagnosed with hyperlipidaemia and 52.6% for those assessed to have obesity. However, analysis of the records revealed that for substantial proportions of individuals neither lifestyle support (interventions and/or signposting) nor medication (hypertension: 12.2%; hyperlipidaemia: 32.2%; obesity: 43.9%) were recorded. Further it was confirmed that limited numbers of patients had lifestyle support recorded in their electronic health record before they were first prescribed medication (diagnosed and undiagnosed), ranging from 12.1% for hypertension to 19.7% for hyperlipidaemia, and 19.5% for obesity.

The authors conclude that there was limited evidence to support the adherence to recommendations of lifestyle support and intervention as recommended in guidance. They postulate that this may have two possible influences. They acknowledge that it may be down to poor recording of non-pharmacological interventions in patients’ health records. But more significantly it may be due to missed opportunities in primary care to instigate the interventions of lifestyle modification. What they recommend is that due to the known link between reduced progression to more significant cardiovascular disease by the intervention of support that impacts on modifiable lifestyle factors, early support and signposting to assist patients to manage their condition Is appropriate before the commencement of pharmacological options.

Conclusion

Prescribing in hypertension as a primary condition and with regard to prevention of further complications is an important area of practice in the UK and globally. It is important to be aware of recording of factors affecting disease and burden and be aware of lifestyle and non-pharmacological interventions for a holistic approach to patient care. It is clear that ethnicity and genetics also play a role in medication choices in prescribing in hypertension and therefore race based guidelines and adherence are important considerations.

Other references

Public Health England (2017) *Health Matters: combating high blood pressure.* Retrieved form <https://www.gov.uk/government/publications/health-matters-combating-high-blood-pressure/health-matters-combating-high-blood-pressure#:~:text=High%20blood%20pressure%20affects%20more,over%20the%20last%20few%20years>.