**A collaborative cardiologist-pharmacist care model to improve hypertension management in patients with or at high risk for cardiovascular disease**

**BACKGROUND:**

- Nearly three quarters of people with cardiovascular disease also have hypertension. Only about half of these patients being treated for hypertension have a blood pressure < 140/90 mmHG.
- The AHA has released more stringent blood pressure goals in patients with CAD, which increases the number of medications needed to reach these values. This increase can affect adherence, increase the risk for drug-related adverse effects and interactions, as well as increase costs.

**OBJECTIVE:**

- To utilize the clinical pharmacist in the more routine chronic disease and medication management of hypertension so that the cardiologist could devote their time to more acute and complex patient issues and then document the quality of care and compare it to the usual care in same cardiology clinic that does not utilize the pharmacist.

**METHODS:**

- **Design:** Single site, unblinded, retrospective cohort; Duration: July 2007-April 2010
- **Inclusion criteria:** Documented established CAD or increased risk (diabetes, carotid artery stenosis, or peripheral arterial disease), baseline systolic BP >135, age between 40-85 years, established care with a Dr of the TTUHSC Cardiology group for at least 3 months during the study frame, and a minimum of 2 visits with either the pharmacist or the cardiologist during the study frame
- **Exclusion criteria:** Documented history of systolic heart failure, significant renal disease, or consistent nonadherance with scheduled clinic appointments
- **Primary outcome measure:** Difference between the two groups in percentage of patients who obtained a BP <130/80mmHg
- **Secondary outcome measure:** Changes in systolic, diastolic, and pulse pressure; number of BP medications used, pulse pressures, duration of study follow-up, and number of clinic appointments or documented BP assessments
- 58 subjects in control group who received traditional care from cardiologists and 59 in experimental group who saw a pharmacist for their BP management
- Data Handling method was not stated though it appeared to be intent-to-treat

**RESULTS:**

- All subjects were included in the study (58 in control and 59 in experimental)
- **Primary outcome measure:** The experimental group showed a significantly higher % obtaining the goal BP of <130/80 with 49.2% vs 31% in the control (p=0.0456).
- **Secondary outcome measures**: Systolic BP decreased significantly in both groups (-12 in control, -22 in experimental), but was significantly lower in the experimental group (p=0.0077). The median diastolic BP decreased in both groups, but was only significant in the experimental

group (-10 vs -5, $p<0.001$). The median number of BP medications used did not change from baseline in either group, though there was a larger % of patients in the experimental group using 3+ meds. The median pulse pressure decreased significantly in both groups (-15 in experimental and -7 in control) but was significantly lower in experimental group ($p=0.0153$). The median duration of follow-up was nearly 50% shorter in the experimental group while the frequency of visits/year was more than two fold greater in the experimental.

- **Authors Conclusion:** The cardiologist-pharmacist care model was more effective in controlling hypertension in patients with or at high risk for CAD compared to the usual care within the same clinic setting.

**STRENGTHS:**

- The use of a control to compare the effectiveness of the pharmacist team
- Observing the pharmacist role in a specialty setting, as well as in a complicated, but prevalent, patient population

**LIMITATIONS:**

- No reported power
- Lack of reporting specific interventions used within the groups
- Large differences found between the control and experimental groups
- No standardized treatment plan for the pharmacists or cardiologists to follow
- Discrepancy of the goal endpoints between the two groups

**CONCLUSION:**

- Although other studies have shown the efficacy of a collaborative care model involving pharmacists, the weaknesses found in this study design prevented the authors from proving causality between pharmacists and improved hypertension control in this setting
- Future research:
    - Randomized, prospective, controlled experimental research in which both groups follow a predetermined algorithm and goal endpoints agreed upon by all providers prior to the start of the study

**Reference:** Irons BK, Meyerrose G, Laguardia S, Kweku H, Seifert CF. A collaborative cardiologist-pharmacist care model to improve hypertension management in patients with or at high risk for cardiovascular disease. Pharmacy Practice (Internet) 2012; 10(1):25-32.

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