Provider Continuity and Control of Hypertension

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The effect of provider continuity on the process and outcome of care remains obscure. Prior studies of continuity have failed to find a consistent relationship between the provision of continuous care and improved outcomes.[1-8]

The purpose of this study was to examine the relationship of provider continuity to measures of health care utilization (process) and the control of essential hypertension (outcome).

Methods

The study was conducted at the San Bernardino County Medical Center. Alternatives for the treatment of hypertension at this facility include several limited specialty clinics where provider continuity is not emphasized, as well as the family health center where continuity of care is provided.

Subjects were selected from a list of patients who filled their prescriptions for hydrochlorothiazide (HCT) from July through December of 1982. Patients were seen in approximately 20 outpatient clinics staffed by over 100 providers.

Subjects were excluded if (1) any care was provided outside the medical center, (2) the duration of care at the medical center was less than 13 months prior to the prescription, and (3) HCT was used for any condition other than hypertension.

Data collection by chart audit was performed by one author. Information extracted included demographic characteristics, mode of payment, and all prior diagnoses recorded. In addition, the number of hospitalizations and ambulatory care visits as well as all medications prescribed for the preceding 12 months were recorded. Finally, the name of the physician who kept records and took blood pressure measurements was noted for each visit.

The association between dependent variables (number of ambulatory care visits and number of abnormal blood pressure readings) and independent variables (provider continuity, demographic characteristics, number of prior diagnoses, and the presence of other medications) was assessed using multiple linear regression. The measure of provider continuity used in this study was SECON,[9] which is the number of sequential pairs of visits to the same physician divided by the total number of visits made minus one. Abnormal blood pressure was defined as a diastolic blood pressure greater than 90 mmHg or a systolic blood pressure greater than 160 mmHg.

Results

Of the 203 charts abstracted, 46 met the criteria for the study. The average patient age was 57 years; one half were white, two thirds were women, and three fourths were receiving public assistance for health care costs.

The average number of active medical problems was 4.8 per patient. Patients had an average of 4.0 medications prescribed. A total of 321 blood pressure measurements was taken during the study period (mean, 6.98 per patient), with 95 (30 percent) being abnormal (mean, 2.07 per patient). The mean number of ambulatory care visits per patient during the preceding 12 months was 8.02 (range 3 to 15). Seven hospitalizations (15 percent) occurred during this period. Average provider continuity was low, with a mean SECON value of 0.25 (range 0 to 1).

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A person using additional hypertensive medications had 2.74 more visits ($P < 0.05$) than those using HCT alone. Although not statistically significant, higher provider continuity was associated with higher ambulatory care utilization. Patients having no continuity of provider experienced 1.19 fewer visits during the prior year as compared with those with total provider continuity. There was a significant association ($P < 0.05$) between SECON and the number of abnormal blood pressure determinations. A person with no continuity had an average of 3.02 more abnormal blood pressure readings than a person with total continuity.

Comment

Results of this study indicate that the number of ambulatory care visits is increased with use of second-step antihypertensive agents. This increase is perhaps a result of further monitoring by physicians as the risk of side effects, the number of medical problems, and the difficulty of control are increased in these patients.

When age, sex, race, payment status, and the presence of other medical problems were controlled for, increased provider continuity was also found to be associated with a decreased number of abnormal blood pressure readings. In this study a difference of three abnormal readings during a 12-month period would have been predicted for those receiving total provider continuity compared with those receiving no continuity. In this and other studies, it cannot be determined which came first, the increased compliance (self-selection bias) or the continuity relationship (true cause and effect). In addition, there may be other demographic characteristics that are associated with better hypertension control (eg, education).

A prospective study in which patients are randomly assigned to groups receiving high and low provider continuity would be a fruitful area for further research into the relationship between continuity and outcome of care.

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Herpetic Whitlow in Family Practice

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Of the 100 species of herpes simplex virus, five are known to cause disease in humans: varicella zoster, Epstein-Barr virus, cytomegalovirus, and herpes simplex virus types 1 and 2. The latter two have been associated with acute gingivostomatitis,[1] keratoconjunctivitis,[2] encephalitis, neonatal infections, and cutaneous eruptions including genital herpes.[3] Herpetic nail-bed infections (whitlow) represent an often misdiagnosed manifestation of herpes simplex virus that must be differentiated

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