

Research Paper

Hypertension medication use and adherence among adults with developmental disability

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Abstract

Background/objective: Adults with developmental disability (DD) have high prevalence of coronary artery disease risk factors, as well as impediments to optimal diagnosis and management. We analyzed antihypertensive medication (AM) use and adherence patterns in a Kansas Medicaid cohort.

Methods: We studied adults (18–64 years) with DD and claims for HT from 7/1/05 to 8/31/06, with review of prescription records of AM use and adherence from 9/1/06 to 8/31/07. Adherence was calculated as proportion of days covered (PDC).

Results: Of 3079 eligible people, 280 (9%) had claims for HT: 51% male, mean age 42 ± 13 , and 81% Caucasian. Of these, 280 (72%) had claims for at least 1 AM; 57% received ≥ 2 AM. Angiotensin converting enzyme inhibitor/angiotensin receptor blockers were most commonly prescribed (65%) followed by diuretics (50%), beta blockers (34%), and calcium channel blockers (26%). Mean PDCs by class ranged from 0.622 to 0.693: 55% had a PDC ≥ 0.80 , a common goal for adherence. Younger individuals were more likely to be adherent ($p < 0.05$), but adherence was not significantly associated with comorbid conditions, gender, or race.

Conclusions: Of our cohort of adults with DD, 9% had HT of whom 72% submitted claims for AMs. A substantial proportion of subjects had inconsistent AM use suggesting suboptimal therapy. The association between younger ages and higher adherence may reflect better community-based support for younger adults. Further work is needed to identify barriers to optimal care for this vulnerable population. © 2013 Elsevier Inc. All rights reserved.

Keywords: Hypertension; Developmental disability; Medication use

The population with developmental disability poses challenges in the provision of adequate medical care, in our nation and in others including nations in Europe, Asia, and Latin America.^{1–10} There are approximately 4.5 million people with developmental disability in the United

States. This population is growing principally due to longer survival. There has been a progressive shift in living environment for this patient group from institutions to the community. This shift has been accompanied by 10% annual increases in public spending for community services for persons with developmental disability, from 1977 to 2000, with an estimated \$29.3 billion total public spending for these services in 2000. Of this spending, 75% came from Medicaid sources.²

Developmental disability is defined by the Federal Developmental Disabilities Act, section 102 (8), as detailed in Table 1. People with developmental disability comprise a heterogeneous group, which includes individuals with Down syndrome, fetal alcohol syndrome, cerebral palsy, brain or spinal cord injury, autism spectrum disorders, Prader–Willi syndrome, and epilepsy as well as other syndromes and conditions. There are broad spectrums of intellectual function and physical disability in these people.

The medical literature offers conflicting data regarding the medical status of populations with developmental

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Results were presented at the American Heart Association Scientific Session, November 2011, in Chicago.

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Table 1

Federal definition of developmental disability

According to the Developmental Disabilities Act, section 102(8), “the term ‘developmental disability’ means a severe, chronic disability of an individual 5 years of age or older that:

1. Is attributable to a mental or physical impairment or combination of mental and physical impairments;
2. Is manifested before the individual attains age 22;
3. Is likely to continue indefinitely;
4. Results in substantial functional limitations in three or more of the following areas of major life activity:
 - (i) Self-care;
 - (ii) Receptive and expressive language;
 - (iii) Learning;
 - (iv) Mobility;
 - (v) Self-direction;
 - (vi) Capacity for independent living; and
 - (vii) Economic self-sufficiency.
5. Reflects the individual’s need for a combination and sequence of special, interdisciplinary, or generic services, supports, or other assistance that is of lifelong or extended duration and is individually planned and coordinated, except that such term, when applied to infants and young children means individuals from birth to age 5, inclusive, who have substantial developmental delay or specific congenital or acquired conditions with a high probability of resulting in developmental disabilities if services are not provided.”

disability.^{1–8,11–17} Most studies find increased prevalence of risk factors such as obesity, poor exercise habits, and unhealthy diets, which increase the occurrence of diseases such as hypertension, diabetes, and hyperlipidemia. These, in turn, are positive predictors for cardiovascular diseases and excess morbidity and mortality. However, some studies have found reduced incidence of some of these chronic conditions in persons with a developmental disability, but equal or greater mortality rates due to cardiovascular diseases. A recent study of 694 patients with developmental disability found that the incidence of several risk factors in the study group was the same as in a comparison group.¹¹ Some reports have suggested that people with more severe impairments have relatively lower levels of cardiovascular risk factors than people with less severe impairments.^{12,13} These inconsistencies raise questions regarding the adequacy of screening, recognition, and management of cardiovascular disease risk factors in this population.^{18–24}

There is concern regarding the attention given by providers to comprehensive screening, the intensity of treatment, and consistency in medical management and follow-up for persons with developmental disability. This population provides challenges to the provision of medical care, including comprehension of their medical condition, attention to long-term treatment and adherence to health management provided by caregivers, financial limitations, and difficulty with transportation.²⁵ Even the encounter of the patient in a health care provider’s office may be difficult if resources and personnel (such as a caregiver accompanying the consumer) are not available to minimize issues with communication and mobility, and with the frequent presence of several medical problems which must be dealt within the limited time allocated to a clinic visit.

With approximately 75% of health care for people with developmental disability provided by Medicaid programs, analysis of Medicaid health record database information can provide substantial insights into issues relating to persons with intellectual or developmental disability.^{19,24–28} The Medicaid system is a health coverage program for eligible individuals and families with low incomes and resources in the United States. In Kansas, eligible persons with a disability are those who meet Social Security disability rules. Medicaid is a need-based program that is jointly funded by the state and federal governments, and is managed by the states. In Kansas, the Medicaid disabled program includes persons with Down’s syndrome and other forms of congenital reduction in cognitive function of all degrees of severity, cerebral palsy, epilepsy, and autism. Some patients also qualify for Medicare and are considered “dual eligible” (can receive benefits from both sources).

Hypothesis/objective

The goal of our study was to ascertain the prevalence of hypertension among adults with developmental disability enrolled in Kansas Medicaid using a claims-based approach. In addition, we examined the use of blood pressure lowering agents among these individuals, in particular, comparing differences in prescribing patterns and compliance among the different antihypertensive medication classes. This knowledge may inform future Medicaid chronic disease management efforts as well as help guide providers in initial choice of the medications which are most likely to optimize patient compliance while adhering to best practice guidelines. While this claims-based approach likely underestimates the true prevalence of hypertension, it generates information to guide our understanding of hypertension management in this population.^{18,19,27,28}

Methods

We conducted a descriptive, retrospective analysis of individuals with a developmental disability identified through the Kansas Medicaid Disabled program. Under an agreement with Kansas Medicaid, we maintain a repository of data on the aged, blind and disabled recipients in the Kansas fee-for-service Medicaid program. This repository includes updated eligibility records and both paid and crossover (e.g., primary payer was not Medicaid) claims from all service providers in the state. These claims include prescription drugs, inpatient hospitalizations, and outpatient medical services including physician office visits, rehabilitation program attendance, home health provider visits, and long-term care facilities. We also have access to an electronic database that consists of required annual case manager assessments of persons with developmental disability (described below). The Kansas Medicaid claims

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