EFFECTIVENESS OF CLINICAL PATHWAYS FOR INPATIENT HEART FAILURE TREATMENT: RESULTS OF A MULTICENTER CONTROLLED TRIAL

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OBJECTIVES: Despite enthusiasm for clinical pathways, they are so far to be diffused in not academic hospitals and rigorous evidence to support their benefits in these kind of facilities is limited. Our purpose was to determine if the use of clinical pathways can improve the hospital treatment pattern for heart failure.

METHODS: We performed a multicenter controlled clinical trial with cluster randomization. We tested clinical pathways in 9 community hospitals in Italy. Hospitals were assigned to continue conventional management (n = 4) or implement clinical pathway (n = 5), which consisted of a combination of patient education, appropriate use of practice guidelines, appropriate consultation and supplies of drugs and ancillary services. A total of 429 patients (214 cases and 215 controls) with heart failure presenting to the emergency department at one of the participating institutions between October 1st 2003 and September 30th 2004 were enrolled.

RESULTS: Control and intervention groups had similar demographics and heart failure severity profiles. The intervention group showed a higher compliance to international guidelines for the treatment of heart failure. We observed in clinical pathways’ group a significant improvement in the appropriate use of ACE inhibitors (57.94% vs. 40.00%; p = 0.002), anti-coagulants (58.88% vs. 14.88%; p = 0.001), beta-blockers (46.73% vs. 10.23%; p = 0.001), digitalis (66.36% vs. 48.84%; p = 0.002), heparin (50.00% vs. 19.07%; p = 0.001), nitro-derivates (33.18% vs. 24.19%; p = 0.039) and vasodilators (39.25% vs. 3.26%; p = 0.0001). We did not observe any differences in the use of diuretics (95.33% vs. 95.81%; p = 0.806) and antiplatelets drugs (31.78% vs. 37.67%; p = 0.237).

CONCLUSIONS: The overall purpose of clinical pathways is to improve the process of care by providing a mechanism to coordinate care and to reduce fragmentation. In our study, the implementation of clinical pathways improved the hospital treatment pattern for heart failure. This suggests that clinical pathways have a positive impact on the quality of care.

CARDIOVASCULAR DISEASE—Coronary Artery Disease

HEALTH AND ECONOMIC BURDEN OF POOR MEDICATION ADHERENCE IN THE UNITED STATES

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OBJECTIVE: Although it is known that poor medication adherence is a pervasive problem, consequences for the US health care system are not well understood. Our objective was to generate quantitative estimates of the health and economic burden of poor medication adherence. METHODS: We used modeling techniques and data from the published literature to generate annual estimates of coronary heart disease (CHD) deaths and losses in net economic benefit attributable to poor adherence with chronic medications in the US. For CHD mortality, we quantified the extent to which poor adherence to antihypertensive, cholesterol-lowering, and hypoglycemic medications contributes to CHD deaths. We quantified losses in net economic benefit attributable to poor adherence in terms of forgone medical cost offsets and lost QALYs, taking into account also the counter influence of pharmacy costs avoided because poorly adherent patients fill fewer prescriptions. We assumed that 50% of patients are poorly adherent (either discontinuing therapy or not complying with recommended dosing), that the average therapy would have a cost-effectiveness ratio of $50,000/QALY under full adherence, and that QALYs are valued at $100,000 in the US (as assumed in a recent Institute of Medicine report on the cost of the uninsured). RESULTS: We estimate that 37,000 CHD deaths annually (approximately 8% of all CHD mortality in the US) are attributable to poor adherence with antihypertensive, cholesterol-lowering, and hypoglycemic medications. We further estimate that losses in net economic benefit attributable to poor adherence with all chronic medications amount to $138.5 billion annually (2003 USD), including $51.9 billion in forgone medical cost offsets and $242.3 billion in lost QALYs, counterbalanced by $155.8 billion in avoided costs of prescription drugs. These findings are sensitive to assumptions regarding the pervasiveness of poor medication adherence. CONCLUSIONS: The health and economic consequences of poor medication adherence in the US are substantial.