

Daily regimen and compliance with treatment

Fewer daily doses and drugs with fewer side effects improve compliance

Patient compliance—that is, adherence to the regimen of care recommended by the doctor and persistence with it over time—has been a common concern in medical practice for a long time. A search on Medline found nearly 60 000 citations since 1980 related to compliance. Though much is known about the problem and how to overcome it, little seems to have been done in everyday medical practice by healthcare systems and practitioners.

At most, 50% of people with chronic disease comply with their doctor's recommendations, irrespective of disease, treatment, or age.¹ Adherence and persistence are poor even among patients with diseases with a high and moderate risk of death.²⁻⁴ Many factors related to patients, doctors, and the medical system affect compliance with treatment.²⁻⁷ Similar problems exist in all countries.^{5,6} Doctors and patients are equally responsible for this abysmal state of affairs.⁵

The disease in which adherence and persistence have been best studied is hypertension, and it can serve as a model. About half the people with hypertension receive drug treatment; in about half of them is blood pressure controlled, and half stop taking their drugs during the initial year of treatment. The median time to discontinuing drugs is 90 days.⁸⁻¹⁰ Persistence varies with individual drugs, and adverse side effects are the prime culprit.¹⁰ This is a reasonable conclusion, given that hypertension usually causes no symptoms and most antihypertensive drugs have uncomfortable side effects. Compliance with antihypertensive drugs is also better in older patients, women, and in those prescribed fewer drugs.

Not frequently examined, however, is the effect of the number of doses a day on compliance. Two studies with similar results summarised the effects of daily regimens of medication on adherence to and persistence with treatment. In 1988, 527 patients with arthritis who were prescribed non-steroidal anti-inflammatory drugs were followed up for up to four periods of three months.¹¹ The study found an inverse linear relation between the number of doses a day and compliance. Adherence and persistence declined in similar fashion. Compliance was 78% for once a day dosing, 72% for twice, 64% for thrice, and 60% for four times a day.

The other study, which followed 21 723 people with hypertension for one year, studied the relation between persistence and the class of antihypertensives prescribed.¹⁰ All patients had insurance benefits for drugs, so payment was not an issue. Persistence at one year after start of treatment was significantly lower with twice a day dosing (29%) than with once a day dosing (up to 56%; $P \leq 0.0001$). By class of drug, persistence with angiotensin II receptor antagonists was highest at 64%, followed by angiotensin converting enzyme inhibitors (58%), calcium antagonists (50%), β blockers (43%), and thiazide diuretics (38%) ($P \leq 0.0001$ for all). The percentage of patients who switched to another antihypertensive drug was similar for all classes of initial medication (6-9%). The remaining patients stopped

all antihypertensive treatment. Persistence with a drug was related to the year in which it was first marketed. Newer drugs had fewer and less bothersome side effects, and patients taking these drugs showed greater persistence. The effects of daily dosing regimens are not unique to pharmaceuticals. For example, during a given week non-compliance with continuous ambulatory peritoneal dialysis for chronic renal failure was 18% in the United States and 7% in Canada.¹² In all three studies benefits forgone by patients because of poor compliance were substantial.

New drugs for arthritis and hypertension have fewer side effects, and their use should help improve compliance. Of course, newer drugs are more expensive. This is true in all aspects of life—newer and higher quality products are usually more expensive, but their value, or the trade off of quality to cost, is also higher. Only in medical care do we expect higher quality at a lower cost.

Given that almost every treatment for arthritis and hypertension has similar outcomes, except for adverse side effects, the doctor's dilemma is whether to step up treatment or to prescribe the best treatment first. Stepping up treatment—the payer's choice—means starting with the least expensive, usually least effective drug or the drug with the highest rate of side effects, and when this fails moving to higher quality drugs. Doctors and patients want the best treatment first, the one with the greatest efficacy and least number of side effects—but this is usually at the highest cost.

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