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RCMAR Measurement Tools

Measuring Medication Adherence

Vik et al. (2004) reviewed the state of measuring medication adherence through a literature search of MEDLIN, PubMed, and International Pharmaceutical Abstracts using the followin keywords: elderly, adherence/nonadherence, compliance/noncompliance, medication/drug methodology/measurement, and hospitalization. The authors state that although several m are available for the assessment of adherence, accurate measurement continues to be diffi At present there is no generally accepted "Gold Standard" for measuring adherence. Krou Wood et al. (2004) also provide a summary of methods to assess medication adherence.

Biological Assays

Biological assays measure the concentration of a drug, its metabolites, or tracer compound the blood or urine of a patient. These measures are intrusive and often costly to administe Patients who know that they will be tested may conciously take medication that they had be skipping so the tests will not detect individuals who have been nonadherent. Drug or food interactions, physiological differences, dosing schedules, and the half-life of the drugs may influence the results. Biological tracers that have known half lives and do not interfere with medication may be used, but there are ethical concerns. All of these methods have high c the assays that limit the feasibility of these techniques. (Vik et al. 2004)

Pill Counts

Counting the number of pills remaining in a patient's supply and calculating the number of that the patient has taken since filling the prescription is the easiest method for calculating medication adherence. Some data indicate that this technique may underestimate adherer older populations (Grymonpre et al. 1998). Patterns of non-adherence are often difficult to discern with a simple count of pills on a certain date weeks to months after the prescription filled. Because pill counts are often based upon the date a prescription is filled, patients wh prescriptions refilled prior to their first one running out and then combining pills into a single possibly non-original) bottle presents complications. Loss of data is common among many studies. (Vik et al. 2004)

Weight of Topical Medications

Hess et al. (2005) used the weight of a topical medication remaining in a tube as a measur adherence. When compared with patient log books of daily medication use, weight estimat adherence were considerably lower than patient log estimates. They recommend that clini trials involving topical applications incorporate medication weights as the primary measrue adherence. In a comparison of methods to measure adherence, Carroll et al. (2004) found estimates calculated from medication logs and medication weights were consistently highe those of electronic monitors.

Electronic Monitoring

The Medication Event Monitoring System (MEMS) manufactured by Aardex Corporation all the assessment of the number of pills missed during a period as well as adherence to a do schedule. The system electronically monitors when the pill bottle is opened, and the resea

can periodically download the information to a computer. The availability and cost of this s could limit the feasibility of its use. On the Aardex web site there is a bibliography of public that use the MEMS.

Pharmacy Records and Prescription Claims

This method can be used primarily for medications that are taken for chronic illnesses (suc hypertension). Concerns regarding the completeness and reliability of these records have expressed (Vik et al. 2004). These records provide only an indirect measure of drugs cons Patterns of over and under consumption for periods less than that between refills cannot be assessed.

Patient Interviews

Studies have consistently shown that third-party assessments of medication adherence by healthcare providers tend to overestimate patients' adherence (Vik et al. 2004). Interviewir patients to assess their knowledge of the medications they have been prescribed and the d schedule provide little information as to whether the patient is adherent with the actual dosi schedule. Subjective assessments by interviewers can bias adherence estimates. This m is rarely used in medical research to assess adherence (Vik et al. 2004).

Patient Estimates of Adherence

Direct questioning of patients to assess adherence can be an effective method. Patients w admit to nonadherence are generally accurate in their assessment. However, patients whc adherence may be underreporting their nonadherence to avoid caregiver disapproval (Vik e 2004). Other methods may need to be employed to detect these patients.

Scaled Questionnaires

Morisky et al. (1986) developed a 4-item scaled questionnaire to assess adherence with antihypertensive treatment. Thier scale demonstrated acceptable psychometric properties.

Li et al. (2005) developed four instruments to measure antihypertensive medication adhere a population of Chinese immigrants in the US. Their measures are culturally sensitive and demonstrate good reliability.

The Hill-Bone Compliance to High Blood Pressure Therapy Scale includes 14 items, 8 of w are directed at assessing medication taking behavior in hypertensive patients (Hill et al. 20 Not only is this method relatively simple and economically feasible to use, but it has the ad advantage of soliciting information regarding situational factors that interfere with medicatio adherence (e.g. forgetfulness, remembering to bring medications along when out of town) (Krousel-Wood et al. 2004).

The Compliance-Questionnaire-Rheumatology (CQR) is a 19-item questionnaire that has b favorably compared with electronic medication event monitoring (de Klerk et al. 2003). Thi instrument has good validity and reliability.

Medication Adherence Self-Efficacy Scale

The purpose of the MASE scale is so clinicians and researchers can identify situations in w patients have low self-efficacy in adhering to prescribed medications. Link

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f you know of a measurement tool that should be included in this list please contact the Measurement Tools Site administrator: Mark Geesey

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