Patient criteria and selection for nonhospital, community-based, parenteral antimicrobial therapy

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PATIENT SELECTION AND EDUCATION

The primary goal of nonhospital community-based parenteral antimicrobial therapy (NHCoPAT) is to allow patients to complete treatment in the comfort of their own home environment safely and effectively, thereby avoiding the inconveniences and complications of prolonged hospitalization. There are several important criteria that must be considered when selecting a patient for NHCoPAT. Factors related to the clinical status of the patient are by far the most essential. Variables to consider include how serious the infection is, whether a patient truly requires intravenous antibiotics or if oral antimicrobials would suffice, the presence of other comorbid conditions that may otherwise keep the patient hospitalized and the degree of nursing care that they require. A patient's overall condition must be stable, and the risk of sudden, life-threatening changes in clinical status must be low. The minimal assessment, therefore, includes not only determining the status of the infectious process but also other concomitant conditions that may affect the safety of continuing care outside the institution (1-3). The list of clinical conditions that can be treated outside of the hospital is constantly expanding.

NHCoPAT often enables the completion of a course of therapy started in the hospital, but NHCoPAT may be initiated in an emergency department, outpatient clinic or office setting. For instance, for patients who develop cytomegalovirus retinitis, hospitalization is usually not required and teaching sessions can be accomplished in the outpatient setting (4). Patients with endocarditis or meningitis, however, should be

hospitalized for the initiation of parenteral antibiotic therapy until the infection is under control (5,6). The overall condition of the patient may make it medically inappropriate to release them from the hospital. However, for those who are medically fit, home intravenous therapy is an important option (7).

The selection of patients for NHCoPAT requires consideration of a number of factors in addition to the disease involved and the patient's clinical status. These include the patient's capabilities and willingness to participate in the program as well as available support systems in the home environment

PATIENT AND/OR CAREGIVER ABILITIES

Once the care team has decided that a patient's infection and condition are appropriate for NHCoPAT, the patient and/or caregivers' abilities and willingness to participate in the program, and economic factors must be considered. Is the patient or caregiver showing signs that they may be overwhelmed with the idea of administering intravenous therapy outside of the hospital? Does the patient perceive the discharge as the result of fiscal constraints within the institution? Such issues need to be dealt with because the willingness and understanding of the program by the patient and/or caregiver is fundamental to the success of the program (1).

MENTAL AND PHYSICAL ABILITIES

The cognitive abilities of the patient or caregiver, particularly related to the level of self-confidence, anxiety and fears should be assessed by the team. The team may also wish to

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perform an informal psychosocial evaluation of the patient or caregiver's mental status. It should be noted that a stable and nondebilitating psychiatric illness need not preclude participation; however, these patients should be monitored closely (1). The exception would, of course, be patients with an infection resulting from a factitious disorder.

Physical abilities are another consideration. Limitations in ambulation or in sitting for prolonged periods of time, or access to transportation may weigh against home therapy. Even if a nurse can visit the home, it may not be appropriate for patients who live alone and are unable to bathe themselves or take care of other basic activities of daily living. For such patients, government programs and other third-party payers will often cover benefits.

The risk of intravenous narcotic or other drug abuse must always be considered in patient selection. Although drug abusers may use a reliable intravenous (IV) line for other than prescribed antimicrobial agents, prolonged hospitalization may be difficult to justify and may not necessarily prevent the problem. If a patient was actively abusing parenteral drugs immediately before the acute presentation, administration of IV antimicrobials in a supervised setting is advised (1-3).

THE HOME SITUATION

One of the most important aspects of a home situation is the availability of family support. Although patients who live alone can also take advantage of NHCoPAT, they should be encouraged to stay with or have regular visits with a responsible friend or relative during treatment. This caregiver should also go through the same training sessions as the patient, even if they are not consistently involved with daily care.

The social situation at home is also an important component of successful therapy. For patients who have marital or family problems, or other demands in the home such as children or a home business, therapy may be more reliable if they remain in the hospital for the duration of parenteral therapy or stay in an alternate environment.

The patient's home environment should be assessed through inspection or inquiry. Outpatient therapy performed at home requires that patients have running water for hand washing and a telephone line for communication with the team. For self- or caregiver-administered antimicrobial therapy, a refrigerator is usually necessary to store premixed antimicrobials. A defined mechanism for needle disposal is necessary, especially if there are children in the home.

Access to transportation is also necessary. Patients should have an automobile, or be able to drive or have ready access to a car and driver or other transportation. Patients who live 1 h or more from medical care and who are at risk for acute medical emergencies such as endocarditis should not be considered for outpatient therapy (1).

COST CONSIDERATIONS

The cost of treating a patient in the home environment is considerably lower than the cost of the patient remaining in

the hospital (8,9). Unfortunately, substantial costs for supplies and medications are still incurred. Most third-party insurers now cover at least 80% of the cost of IV antimicrobials and, in some instances, the cost for supplies. Even for those patients that have 80% coverage, it is sometimes financially impossible for them to incur such a cost. For those patients who do not have coverage or who have a significant insurance drug copay, often the institution's home IV program will absorb this cost to be able to discharge the patient from the acute care environment. Funding varies from province to province.

PATIENT EDUCATION

Patients and their caregivers are essential members of the NHCoPAT team and must be well-informed, well-educated and willing participants. A learning agreement or contract should be made available whereby the learner agrees to be educated on several aspects of home IV administration. They must understand the risks and responsibilities associated with outpatient therapy. They must be informed about their infection, its treatment, and the potential problems and complications to monitor. Written materials in understandable language should be provided for review and reference.

Preparing patients or caregivers to assume responsibility for the independent IV administration of their antimicrobials is a major part of the role of the NHCoPAT team. Nurses can begin teaching during the actual administration of an infusion, thus enabling the evaluation of the patients or caregivers willingness and ability to learn, understanding of the diagnosis and acceptance of the treatment regimen while the team can at the same time monitor the patient's response to the medication. Early identification of a patient's or caregivers fears or aversions to needles or blood may be crucial to the success of the program. The nurse should also look for physical impediments to independence, including impaired visual acuity, manual dexterity or limited mobility.

The teaching plan should be individualized according to the type of therapy, venous access, drug delivery system and home environment, and should be completed by the nurse and pharmacist team members. The presentation should include discussion, illustration and demonstration of all aspects of therapy, including the purpose of therapy, infection control measures, preparation of the admixtures, administration procedures, vascular access care, therapeutic monitoring, how to obtain supplies, possible adverse effects such as bleeding and phlebitis or other complications. The patient should also be instructed about what to do in the event of an emergency or a site change. Illustrations are particularly helpful, as are materials that permit patients to handle the equipment and practice correct administration technique. Most patients and caregivers can be taught to administer infusions in one to two 2 h sessions (1).

ACCESS TO HEALTH CARE SERVICE SUPPORTS

A safe and effective NHCoPAT program must ensure a physician, nurse and pharmacist are available at all times. Patients should have clear, written instructions as to who to call with particular problems and under what circumstances (1).

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