Perspective

Urgent Start Peritoneal Dialysis
Defining What It Is and Why It Matters

Peter G. Blake and Arsh K. Jain


In the past 6 years, there has been a flurry of interest in urgent start peritoneal dialysis (PD) as judged by numbers of published articles, presentations at meetings, and informal discussions among PD practitioners. A brief look at PubMed shows 20 published papers on the topic since 2012 but very few before that time. Recent reports mainly come from North America and China, with only scattered interest in individual centers elsewhere, although this may not reflect clinical practice.

The aims of this review are to clarify the concept of urgent start PD and suggest better definitions, look at the reasons for the attention that it has been receiving, estimate how much it is being used and its effect, discuss some of the challenges, and draw overall conclusions.

It is best to start with definitions. Some define urgent start PD as use of the PD catheter within 14 days of insertion (1,2). However, although early use is clearly a part of urgent start, this is a limited definition that misses the essence of the approach. Urgent start PD is a strategy whereby patients with advanced CKD who urgently and unexpectedly need dialysis due to uremia or fluid overload are treated with PD rather than hemodialysis (HD), which has been the standard approach in such patients (3–5). This definition excludes the use of PD in AKI, which has some similarities logistically but is conceptually quite different.

Patients on urgent start PD are a mix of those with unrecognized advanced CKD and those whose CKD was recognized but who deteriorated unexpectedly. These patients are sometimes described as “crashlanders” or “parachutes,” and they are very common in most programs. Critically, however, the definition focuses on the idea that PD is being used as an alternative to urgent HD using a central venous catheter. The strategy, therefore, avoids the need for two accesses in patients who wish eventually to do PD (3,4). It also, very importantly, is a strategy that seeks to increase PD use, because this patient population typically starts and largely stays on HD. A costing study of urgent start PD versus urgent start HD by Liu et al. (4) summarizes this well and suggests that the strategy is cost effective for initiating urgently needed maintenance dialysis, particularly when the patient intends to do PD long term. It should be added that patients with an urgent start who are critically ill or intensely catabolic with severe pulmonary edema or refractory hyperkalemia and acidosis are mostly more safely treated with urgent start HD.

The urgent start PD definition on the basis of catheter use within 14 days is less satisfactory, because some programs routinely start elective low-volume PD within that timeline. Also, a patient who can wait that long to initiate dialysis is not truly an “urgent” start. Furthermore, it does not exclude patients who do HD for some of those first 14 days and are, therefore, really urgent start HD. Truly urgent start PD, where catheters are used within 48–72 hours of insertion, has been well described (3,6,7). Indeed, Povlsen and Ivarsen (3) from Denmark, who were, in 2006, the first to publish on urgent start PD, described initiating PD immediately after catheter insertion. Such a definition has also been used by Ponce and coworkers (6) from Brazil and Nayak et al. (7) from India. The literature would be clearer and outcomes would be easier to compare if this distinction was emphasized. The term “urgent start” PD should be reserved for patients with truly urgent presentations requiring PD within 72 hours of catheter insertion. The more elective variant, where PD is started between 3 and 14 days after catheter insertion and HD is sometimes used initially, is best termed “early start PD,” and it is predominantly an outpatient and less stressful procedure.

What is driving the recent interest in both urgent start PD and early start PD? In the United States, a major factor is the reimbursement changes introduced in 2011, which made PD more attractive financially for dialysis providers (4). These changes have led to significant growth in PD, and these strategies are ways to maintain that momentum (4,8). In Canada, there are strong pressures to increase home dialysis use, and urgent start PD and early start PD are ways to achieve this (9). In most of Europe, a drive to grow PD is less apparent, and these approaches have received less attention.

The largest reported experience with urgent start PD has come from China, and here, the situation may be different (5,10). Acute PD for AKI is used in many developing countries, and therefore, unlike in higher-income countries, the idea of using PD in urgently deteriorating CKD is neither particularly novel nor challenging. In these settings, urgent start PD is not really very new. Similarly, Ponce and coworkers (6)
from Brazil, who have published on urgent start PD, have been doing acute PD on a large scale for years.

How much urgent and early start PD is being carried out? A non-scientific survey of United States nephrologists with interest in PD suggests that its use has grown but is very variable between centers, accounting for about 10% of PD starts and ranging from 0% to 20%. There is a sense that large dialysis organizations would, however, like to encourage more urgent and early start PD. In Ontario, Canada’s most populous province, an informal survey indicates that ten of 26 nephrology programs are practicing some form of urgent or early start PD and that this has helped grow PD use. A major limiting factor in both countries is the availability of willing surgeons, nephrologists, or interventional radiologists to place peritoneal catheters competently at short notice. Most nephrologists are not committed to developing this skill; for most surgeons, the procedure is not lucrative, and doing it urgently is not a priority. An additional factor in the United States is lack of infrastructure to cope with the recently growing PD population (1). In both the United States and Ontario, PD has grown markedly over the past 5 years, and these increases are partly attributable to urgent and early start PD (8). Other challenges include the higher risk of early exit site leaks and catheter malfunction due to inadequate bowel preparation, but these are not prohibitive (1,5,9,10). Technique failure rates are not notably higher (5).

However, early use of PD is often a stressful intervention requiring a high degree of organization at a program level (1,9). This is especially so with true urgent starts. Apart from catheter placement, the need for a nurse coordinator to run the program and a social worker or nurse to counsel the patient and family and facilitate shared decision making is central. It is important that the patient and family are aware that consenting to these approaches is also accepting PD as the chronic dialysis modality (1,4). The rationale of urgent start PD would be less convincing if the patient wished to do long-term HD. All true urgent starts, both HD and PD, need hospitalization, but this may be for longer with PD. The subsequent need to deliver outpatient daily PD to an untrained patient is demanding for staff. PD training needs to occur early so that care can be moved to the home, and this can disrupt routine training schedules. Often, the training nurses have to make frequent home visits, because teaching a patient who is uremic may take longer than usual. Some patients with urgent starts need to spend time convalescing in nursing homes, where PD may not be feasible. In the United States, transition from in-hospital PD to outpatient dialysis facilities may be complicated. The biggest challenge of all, however, is placed on the patients and their families. The uncertainty and the need to adapt and learn a new technique while the patient is often unwell and anxious are stressful. Lots of support is required, and assisted home PD with visiting nurses is helpful. This is available in some countries but rarely in the United States (1,9). These challenges are less intense in more elective early start PD. Of course, urgent start HD is also stressful but does not require the patient or family to learn how to do dialysis.

In summary, both early and urgent start PD are helpful strategies for increasing PD use, provided that the program is well organized and that catheters can be placed effectively at short notice. They can allow patients who are interested in choosing PD the opportunity to avoid two accesses and unnecessary HD exposure, but it is often stressful in the short term. A clearer distinction between urgent start PD and early start PD using the definitions suggested here would be helpful.

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