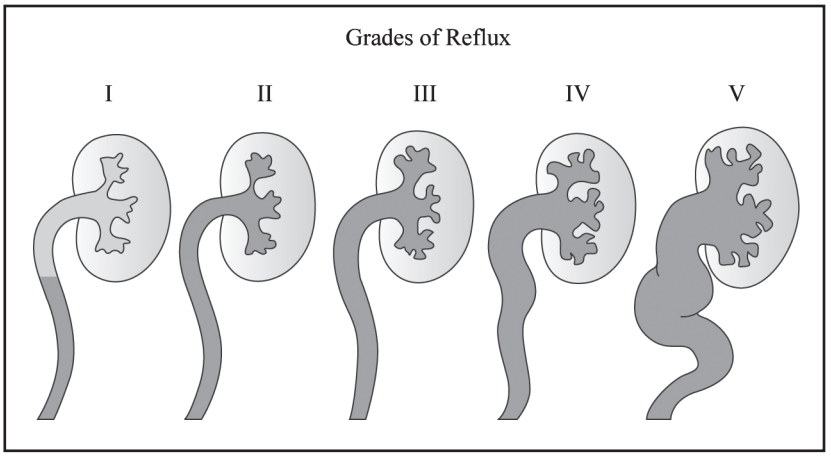

Figure 4-1. Grading of vesicoureteral reflux. Grade I—into distal ureter, Grade II—up into renal pelvis and calyces without dilation, Grade III—with mild dilation of pelvis and calyces, Grade IV—with moderate dilation of ureter and pelvis and moderate blunting of the calyces, Grade V—gross dilation and tortuosity of the ureter and pelvis and significant blunting of the calyces. (Adapted from Evidence-Based Care Guideline for Medical Management of First Urinary Tract Infection in Children, Cincinnati Children's Hospital Medical Center.)

follow-up dimercaptosuccinic acid (DMSA) scans, although not always due to recurring infections. This last fact highlights clinicians' concerns that patients with higher grades of reflux are at greater risk due to the potential of less functional renal parenchyma at baseline.

When pressed by parents asking the sometimes dreaded, "What would you do if this was your child?" I share that I would not, as a rule, start prophylaxis with Grade 2, but would in Grades 3 and 4 VUR. However, I also share that this view has evolved over time and may change again. The ongoing RIVUR study in the United States hopes to answer many of the questions regarding prophylaxis and reflux, as it seems to address many of the flaws of earlier studies with its prospective nature, adequate sample size (>500), inclusion only of patients with VUR, and use of placebo.[2]

Even if studies conclusively find a benefit to antibiotic prophylaxis in VUR, there is still another question to be answered about their use: "How long should prophylaxis be administered?" The correct answer is until the patient's risk has resolved, but what is truly placing the patient at risk is often more difficult to determine. For many practitioners, their answer may be simple—until the reflux is resolved or becomes low grade, but this requires periodic checking by repeat voiding cystourethrogram (VCUG). For other patients, their biggest risk factor may be their lack of toilet-training or their inability to verbalize early symptoms. In each instance, conversations, including specific scenarios such as these, with families should be pursued so that they can be part of the decision-making process of developing criteria for discontinuation of prophylaxis. In general, patients who are started on prophylaxis should be maintained for a minimum of 6 months without significant breakthrough infections.