Chapter 11
End-Stage Renal Disease and Dialysis

CASE 1

An 18-year old male with end-stage renal disease secondary to FSGS initiates chronic maintenance hemodialysis therapy. He receives 40 μg of recombinant hepatitis B vaccine intramuscularly in the deltoid, receiving three separate doses. Six weeks after the primary series is completed, antibody levels against hepatitis B surface antigen are <10 mU/ml.

Which ONE of the following is the MOST appropriate course of action at this time?

A. No further hepatitis B vaccine administration or antibody testing
B. Repeat antihepatitis B surface antigen after three months
C. Revaccinate with up to three additional intramuscular doses
D. Revaccinate with up to three intradermal doses
E. Revaccinate using Freund adjuvant

The correct answer is C. The Center for Disease Control Advisory Committee on Immunization Practices recommends revaccination with recombinant hepatitis B vaccine with up to three additional doses for susceptible persons who do not develop protective antibody levels after an initial vaccination series. The intramuscular route is preferred because there are no data regarding long-term protection following intradermal vaccination and the vaccine is not licensed for the intradermal route of administration. Freund’s adjuvant is not used with the hepatitis B vaccine.

Reference

CASE 2

A 14-year old girl on dialysis has recurrent hyperkalemia, prompting dietary intervention. Her dietitian notes that she has had an excessive consumption of strawberries and oranges, which may be contributing to her hyperkalemia. She is asked to remove these from her diet. One week later she presents to the dialysis unit with new symptoms of altered mental status, hiccoughs, and paresthesias of the limbs.

Consumption of which one of the following is the most likely explanation for her symptomatology?

A. Papayas  
B. Passion fruit  
C. Star fruit  
D. Avocado  
E. Cantaloupe

The correct answer is C. Star fruit, an exotic fruit, has potent neurotoxicity in uremic patients. Ingestion of 1–2 fruits is reported to be associated with the development of neurological symptoms within hours, an overall 40% morbidity, and 80% mortality in patients with altered mental status. Papayas, passion fruit, avocados, and cantaloupe are not associated with neurotoxicity in uremic patients.

Reference

CASE 3

A 15-year old boy on dialysis has recurrent intradialytic hypotension, often necessitating that he remain in the dialysis unit until his BP has stabilized. His mother confides in you that her son is contemplating discontinuation of dialysis therapy because of this problem, and she asks if you can adjust the dialysis prescription to improve the problem.

Which ONE of the following is least effective in reducing intradialytic hypotension?

A. Sequential ultrafiltration followed by dialysis  
B. High-sodium dialysate  
C. Use of sodium modeling  
D. Low-temperature dialysate (35°C)  
E. Administration of midodrine