VI.7 Vaccine recommendations for patients on chronic HD (except HB vaccination)

Guideline VI.7.1

A. Pneumococcal polysaccharide vaccine may be recommended especially in the elderly HD patients.
Revaccination is also recommended 5 years after the previous dose.

(Evidence level: C)

Commentary on Guideline VI.7.1

More than 75% of the dialysis patients have an adequate response to the vaccine [219–222] but their antibody titres are considerably less than those of healthy vaccinated adults [219,220,223] and decline rapidly [219–221].

The Advisory Committee on Immunization Practice (ACIP) recommended a standard vaccination to all dialysis patients 2 years of age or older and revaccination 3–5 years after the first dose of pneumococcal vaccine [224].

Guideline VI.7.2

A. Influenza vaccine is recommended annually before the beginning of the influenza season for HD patients.

(Evidence level: B)

Commentary on Guideline VI.7.2

In HD patients there is an increased risk of influenza-related mortality [225,226]. Influenza vaccination of HD patients according to current recommendations results in an effective humoral immune response [227,228] but the post-vaccination titre is often less in dialysis patients than in immunocompetent subjects [227–229].

Guideline VI.7.3

A. Patient on dialysis should receive the diphtheria and tetanus toxoids as recommended for healthy people.

(Evidence level: B)

Commentary on Guideline VI.7.3

All inactivated vaccines and toxoids are safe and effective when used in dialysis patients. These patients should receive the same doses and schedules recommended for immunocompetent persons [230,231]. In adults the standard anti-tetanus vaccination produces satisfactory response but a rapid decline in antibody titres sometimes occurs leading to an absence of protection 6 months later [232].

References


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2. Sarnak MJ, Jaber BL. Mortality caused by sepsis in patients with end-stage renal disease compared with the general population. *Kidney Int* 2000; 58: 1758–1764 (B)


9. Kaplowitz LG, Comstock JA, Landwehr DM, Dalton HP, Mayhall CG. Prospective study of microbial colonization of the nose and skin and infection of the vascular access site in hemodialysis patients. *J Clin Microbiol* 1988; 26: 1257–1262 (B)

10. Keane WF, Shapiro FL, Raij L. Incidence and type of infection in hemodialysis patients according to current recommendations (*Evidence level: C*).


27. Bloembergen WE, Port FK. Epidemiological perspective on infections in chronic dialysis patients. Adv Ren Replace Ther 1996; 3: 34–37 (B)


34. Sasaki S, Akiba T, Suenaga M et al. Tuberculosis in patients undergoing maintenance dialysis. Adv Ren Replace Ther 1991; 8: 34–37 (B)


39. Control measures for hepatitis B in dialysis centers. Viral hepatitis investigations and control series. Atlanta Centers for Disease Control and Prevention, 1977 (C)


44. Gerberding JL. Prophylaxis for occupational exposure to HIV. Ann Intern Med 1996; 125: 497–501 (B)


50. Goldblum SE, Reed WP. Host defenses and immunologic alterations associated with chronic hemodialysis. Ann Intern Med 1993; 118: 613–615 (C)


52. Haag-Weber M, Horl HW. Are granulocyte inhibitory proteins contributing to enhanced susceptibility to infections in uremia? Nephrol Dial Transplant 1996; 11 [Suppl 2]: 98–100 (C)


64. NKF DOQI Clinical practice guidelines for nutrition in chronic renal failure. Am J Kidney Dis 2001; 35 [Suppl 2]: S20–S21 (C)


68. Lowrie EG, Lew NL. Death risk in hemodialysis patients: the predictive value of commonly measured variables and an evaluation of death rate differences between facilities. Am J Kidney Dis 1990; 15: 458–482 (B)


70. Iseki K, Kawazoe N, Fukiyama K. Serum albumin is a strong predictor of death in chronic dialysis patients. Kidney Int 1993; 44: 115–119 (B)


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80. de Sousa M. Immune cell functions in iron overload. *Clin Exp Immunol* 1989; 75: 1–6 (C)


83. Boelaert JR, Van Landuyt HW, Valcke YJ et al. The role of iron overload in *Yersinia enterocolitica* and *Yersinia pseudotuberculosis* bacteremia in haemodialysis patients. *J Infect Dis* 1987; 156: 384–387 (B)


87. Boelaert JR, Van Landuyt HW, Valcke YJ et al. The role of iron overload in *Yersinia enterocolitica* and *Yersinia pseudotuberculosis* bacteremia in haemodialysis patients. *J Infect Dis* 1987; 156: 384–387 (B)


94. Kodama Y, Ikenaga H, Miyazaki S et al. Switch from conventional to high-flux membrane reduces the risk of carpal tunnel syndrome and mortality of haemodialysis patients. *Kidney Int* 1997; 52: 1096–1101 (B)


97. Chow JW, Yu VL. *Staphylococcus aureus* nasal carriage in hemodialysis patients. Its role in infection and approaches to prophylaxis. *Arch Intern Med* 1989; 149: 1258–1262 (C)


SECTION VI. Haemodialysis-associated infection


126. Anderson JE, Chang ASY, Anstadt MP. Polytetrafluoroethylene hemoaccess site infections. ASAIO J 2000; 46: S18–S21 (B)


138. Natov SN, Pereira BJ. Routine serologic testing for hepatitis C virus infection should be instituted among dialysis patients. Semin Dial 2000; 13: 393–398 (C)


141. centers for Disease Control: screening for hepatitis C virus in dialysis units. Nephron 1995; 70: 301–306 (B)


146. Siskind MS, Thienemann D, Kirlin L. Isoniazid-induced neurotoxicity in chronic dialysis patients: report of three cases and a review of the literature. Nephron 1993; 64: 303–306 (B)


152. Pereira BJ, Levey AS. Hepatitis C virus infection in dialysis and renal transplantation. Kidney Int 1997; 51: 981–999 (C)


155. Natov SN, Pereira BJ. Routine serologic testing for hepatitis C virus infection should be instituted among dialysis patients. Semin Dial 2000; 13: 393–398 (C)


159. Natov SN, Pereira BJ. Routine serologic testing for hepatitis C virus infection should be instituted among dialysis patients. Semin Dial 2000; 13: 393–398 (C)


SECTION VI. Haemodialysis-associated infection


171. Leads from the MMWR. Update: universal precautions for patients undergoing hemodialysis who have A-antibodies or non-A, non-B hepatitis. Infect Control Hosp Epidemiol 1985; 6: 301–305 (C)


175. Najem GR, Louria DB, Thind IS. HCV.


186. Update: provisional Public Health Service recommendations for chemoprophylaxis after occupational exposure to HIV. Morb Mortal Wkly Rep 1996; 45: 468–480 (C)


189. Brugaera M, Rodicio JL, Alcazar JM et al. Effects of different dose levels and vaccination schedules on immune response to a recombinant DNA hepatitis B vaccine in haemodialysis patients. Vaccine 1990; 8 [Suppl]: S47–S49 (B)

190. Scheiermann N, Gesemann M, Maurer C, Just M, Berger R. Persistence of antibodies after immunization with a recombinant yeast-derived hepatitis B vaccine following two different schedules. Vaccine 1990; 8 [Suppl]: S44–S46 (B)


201. Mittvali A. Responsiveness to hepatitis B vaccine in immunocompromised patients by doubling the dose scheduling. Nephron 1996; 73: 417–420 (B)


206. Waite NM, Thomson LG, Goldstein MB. Successful vaccination with intradermal hepatitis B vaccine in hemodialysis...


211. Hirsch MS, Tolkoff-Rubin NE, Kelly AP, Rubin RH. Pharmacokinetics of human and recombinant leukocyte interferon alpha in chronic renal failure who are undergoing hemodialysis. J Infect Dis 1983; 148: 335 (B)


230. Recommendations of the advisory Committee on immunization practices (ACIP) use of vaccines and immunoglobulins in persons with altered immunocompetence. J Pediatr 1986; 146: 1554–1556 (B)
