

- [12] Sur D, Niyogi SK, Sur S, Datta KK, Takeda Y, Nair GB, et al. Multidrug-resistant *Shigella dysenteriae* type 1: forerunners of a new epidemic strain in eastern India? *Emerg Infect Dis* 2003;9:404-5.
- [46] Nataro JP, Barry EM. Diarrheal disease vaccines. In: Plotkin SA, Orenstein WA, Offit PA, editors. *Vaccines* 5th ed: Saunders-Elsevier, 2008: 1163-71.
- [101] Niyogi SK. Shigellosis. *J Microbiol* 2005;43:133-43.
- [173] Shigellosis: disease burden, epidemiology and case management. *Wkly Epidemiol Rec* 2005;80:94-9.
- [174] Levine OS, Levine MM. Houseflies (*Musca domestica*) as mechanical vectors of shigellosis. *Rev Infect Dis* 1991;13:688-96.
- [175] Ashkenazi S. *Shigella* infections in children: new insights. *Semin Pediatr Infect Dis* 2004;15:246-52.
- [176] von Seidlein L, Kim DR, Ali M, Lee H, Wang X, Thiem VD, et al. A multicentre study of *Shigella* diarrhoea in six Asian countries: disease burden, clinical manifestations, and microbiology. *PLoS Med* 2006;3:e353.
- [177] Chompook P, Samosornsuk S, von Seidlein L, Jitsanguansuk S, Sirima N, Sudjai S, et al. Estimating the burden of shigellosis in Thailand: 36-month population-based surveillance study. *Bull World Health Organ* 2005;83:739-46.
- [178] Agtini MD, Soeharno R, Lesmana M, Punjabi NH, Simanjuntak C, Wangsasaputra F, et al. The burden of diarrhoea, shigellosis, and cholera in North Jakarta, Indonesia: findings from 24 months surveillance. *BMC Infect Dis* 2005;5:89.
- [179] Cossart P, Sansonetti PJ. Bacterial invasion: the paradigms of enteroinvasive pathogens. *Science* 2004;304:242-8.
- [180] Cherla RP, Lee SY, Tesh VL. Shiga toxins and apoptosis. *FEMS Microbiol Lett* 2003;228:159-66.
- [181] Koterski JF, Nahvi M, Venkatesan MM, Haimovich B. Virulent *Shigella flexneri* causes damage to mitochondria and triggers necrosis in infected human monocyte-derived macrophages. *Infect Immun* 2005;73:504-13.
- [182] Levine MM, Kotloff KL, Barry EM, Pasetti MF, Sztein MB. Clinical trials of *Shigella* vaccines: two steps forward and one step back on a long, hard road. *Nat Rev Microbiol* 2007;5:540-53.
- [183] Tacket CO, Binion SB, Bostwick E, Losonsky G, Roy MJ, Edelman R. Efficacy of bovine milk immunoglobulin concentrate in preventing illness after *Shigella flexneri* challenge. *Am J Trop Med Hyg* 1992;47:276-83.
- [184] Samandari T, Kotloff KL, Losonsky GA, Picking WD, Sansonetti PJ, Levine MM, et al. Production of IFN-gamma and IL-10 to *Shigella* invasins by mononuclear cells from volunteers orally inoculated with a Shiga toxin-deleted *Shigella dysenteriae* type 1 strain. *J Immunol* 2000;164:2221-32.
- [185] Jennison AV, Verma NK. *Shigella flexneri* infection: pathogenesis and vaccine development. *FEMS Microbiol Rev* 2004;28:43-58.
- [186] World Health Organ. Future needs and directions for *Shigella* vaccines. *Wkly Epidemiol Rec* 2006;81:51-8.
- [187] Kweon MN. Shigellosis: the current status of vaccine development. *Curr Opin Infect Dis* 2008;21:313-8.

- [188] Cohen D, Ashkenazi S, Green M, Lerman Y, Slepon R, Robin G, et al. Safety and immunogenicity of investigational Shigella conjugate vaccines in Israeli volunteers. *Infect Immun* 1996;64:4074-7.
- [189] Cohen D, Ashkenazi S, Green MS, Gdalevich M, Robin G, Slepon R, et al. Double-blind vaccine-controlled randomised efficacy trial of an investigational Shigella sonnei conjugate vaccine in young adults. *Lancet* 1997;349:155-9.
- [190] Ashkenazi S, Passwell JH, Harlev E, Miron D, Dagan R, Farzan N, et al. Safety and immunogenicity of Shigella sonnei and Shigella flexneri 2a O-specific polysaccharide conjugates in children. *J Infect Dis* 1999;179:1565-8.
- [191] Passwell JH, Ashkenazi S, Harlev E, Miron D, Ramon R, Farzam N, et al. Safety and immunogenicity of Shigella sonnei-CRM9 and Shigella flexneri type 2a-rEPAsucc conjugate vaccines in one- to four-year-old children. *Pediatr Infect Dis J* 2003;22:701-6.
- [192] Passwell JH, Harlev E, Ashkenazi S, Chu C, Miron D, Ramon R, et al. Safety and immunogenicity of improved Shigella O-specific polysaccharide-protein conjugate vaccines in adults in Israel. *Infect Immun* 2001;69:1351-7.
- [193] Chowers Y, Kirschner J, Keller N, Barshack I, Bar-Meir S, Ashkenazi S, et al. O-specific [corrected] polysaccharide conjugate vaccine-induced [corrected] antibodies prevent invasion of Shigella into Caco-2 cells and may be curative. *Proc Natl Acad Sci U S A* 2007;104:2396-401.
- [194] Phalipon A, Costachel C, Grandjean C, Thuizat A, Guerreiro C, Tanguy M, et al. Characterization of functional oligosaccharide mimics of the Shigella flexneri serotype 2a O-antigen: implications for the development of a chemically defined glycoconjugate vaccine. *J Immunol* 2006;176:1686-94.
- [195] Mel D, Gangarosa EJ, Radovanovic ML, Arsic BL, Litvinjenko S. Studies on vaccination against bacillary dysentery. 6. Protection of children by oral immunization with streptomycin-dependent Shigella strains. *Bull World Health Organ* 1971;45:457-64.
- [196] Levine MM, Gangarosa EJ, Barrow WB, Weiss CF. Shigellosis in custodial institutions. V. Effect of intervention with streptomycin-dependent Shigella sonnei vaccine in an institution with endemic disease. *Am J Epidemiol* 1976;104:88-92.
- [197] Venkatesan M, Fernandez-Prada C, Buysse JM, Formal SB, Hale TL. Virulence phenotype and genetic characteristics of the T32-ISTRATI Shigella flexneri 2a vaccine strain. *Vaccine* 1991;9:358-63.
- [198] Katz DE, Coster TS, Wolf MK, Trespalacios FC, Cohen D, Robins G, et al. Two studies evaluating the safety and immunogenicity of a live, attenuated Shigella flexneri 2a vaccine (SC602) and excretion of vaccine organisms in North American volunteers. *Infect Immun* 2004;72:923-30.
- [199] Sadorge C, Ndiaye A, Beveridge N, Frazer S, Giemza R, Jolly N, et al. Phase 1 clinical trial of live attenuated Shigella dysenteriae type-1 DeltaicaA Deltaent Deltaefp DeltastxA:HgR oral vaccine SC599 in healthy human adult volunteers. *Vaccine* 2008;26:978-87.
- [200] Kotloff KL, Pasetti MF, Barry EM, Nataro JP, Wasserman SS, Sztein MB, et al. Deletion in the Shigella enterotoxin genes further attenuates Shigella flexneri 2a bearing guanine auxotrophy in a phase 1 trial of CVD 1204 and CVD 1208. *J Infect Dis* 2004;190:1745-54.
- [201] Kotloff KL, Simon JK, Pasetti MF, Sztein MB, Wooden SL, Livio S, et al. Safety and immunogenicity of CVD 1208S, a live, oral DeltaguaBA Deltasen Deltaset Shigella flexneri 2a vaccine grown on animal-free media. *Hum Vaccin* 2007;3:268-75.

- [202] Orr N, Katz DE, Atsmon J, Radu P, Yavzori M, Halperin T, et al. Community-based safety, immunogenicity, and transmissibility study of the *Shigella sonnei* WRSS1 vaccine in Israeli volunteers. *Infect Immun* 2005;73:8027-32.
- [203] McKenzie R, Venkatesan MM, Wolf MK, Islam D, Grahek S, Jones AM, et al. Safety and immunogenicity of WRSd1, a live attenuated *Shigella dysenteriae* type 1 vaccine candidate. *Vaccine* 2008;26:3291-6.
- [204] Ranallo RT, Thakkar S, Chen Q, Venkatesan MM. Immunogenicity and characterization of WRSF2G11: a second generation live attenuated *Shigella flexneri* 2a vaccine strain. *Vaccine* 2007;25:2269-78.
- [205] McKenzie R, Walker RI, Nabors GS, Van De Verg LL, Carpenter C, Gomes G, et al. Safety and immunogenicity of an oral, inactivated, whole-cell vaccine for *Shigella sonnei*: preclinical studies and a Phase I trial. *Vaccine* 2006;24:3735-45.
- [206] Kaminski RW, Turbyfill KR, Oaks EV. Mucosal adjuvant properties of the *Shigella* invasin complex. *Infect Immun* 2006;74:2856-66.
- [207] Oaks EV, Turbyfill KR. Development and evaluation of a *Shigella flexneri* 2a and *S. sonnei* bivalent invasin complex (Invaplex) vaccine. *Vaccine* 2006;24:2290-301.