

References

- Aittoniemi J, Miettinen A, Laippala P, Isolauri E, Viikari J, Ruuska T and Soppi E.** Age-dependent variation in the serum concentration of mannan-binding protein. *Acta Paediatr* 1996; 85: 906-9.
- Al-Arousi AA.** The value of immunoglobulin and complement levels in the early diagnosis of neonatal sepsis. Thesis submitted for partial fulfillment of Master degree in Pediatrics, Faculty of Medicine, Ain-Shams University; 2001.
- Ali RA.** Serum adiponectin in neonatal sepsis. Thesis submitted for partial fulfillment of Master degree in Pediatrics, Faculty of Medicine, Ain-Shams University; 2006.
- Aly LH.** Comparison between conventional blood culture and lysis centrifugation culture in early diagnosis of neonatal sepsis. Thesis submitted for partial fulfillment of Master degree in Pediatrics, Faculty of Medicine, Ain-Shams University; 2001.
- Ambrosio AR, De Messias-Reason IJ.** *Leishmania* (Viannia) *braziliensis*: interaction of mannose-binding lectin with surface glycol conjugates and complement activation. An antibody independent defence mechanism. *Parasite Immunol* 2005; 27: 333-40.
- Angus DC and Wax RS.** Epidemiology of sepsis: an update. *Crit Care Med* 2001; 29: 109-16.

- Anwer SK, Mustafa S and Pariyani S.** Neonatal sepsis: an etiological study. J Pak Med Assoc (JPMA) 2000; 50 (3): 91-8.
- Babula O, Lazdane G, Kroica J, Ledger WJ and Witkin SS.** Relation between recurrent vulvovaginal candidiasis, vaginal concentrations of mannose-binding lectin, and a mannose binding lectin gene polymorphism in Latvian women. Clin Infect Dis 2003; 37: 733-7.
- Babula O, Lazdane G, Kroica J, Linhares IM, Ledger WJ and Witkin SS.** Frequency of interleukin-4 (IL-4)-589 gene polymorphism and vaginal concentrations of IL-4, nitric oxide, and mannose binding lectin in women with recurrent vulvovaginal candidiasis. Clin Infect Dis 2005; 40: 1258-62.
- Badrawi NH, Abdel-Meguid IE and Wasef MA.** Detection of different bacteriological species responsible for early-onset neonatal sepsis. The Gazette of the Egyptian Pediatric Association 2001; 49 (I): 23-31.
- Badrawi NH, Bashir MM, Iskander IF and Saied DA.** Neonatal infections in NICU: magnitude of the problem. Kasr El-Aini Medical Journal 2005; 11 (5): 181-195.
- Ballard JL, Khoury JC, Wedig K, Wang L, Eilers-Walsman BL and Lipp R.** New Ballard Score, expanded to include extremely premature infants. J Pediatr 1991; 119 (3): 417-23.
- Ballow M.** Mechanisms of action of intravenous immune serum globulin therapy. Pediatr Infect Dis J 1994; 13: 806-811.

- Baltimore RS.** Neonatal sepsis: epidemiology and management. Paediatr Drugs 2003; 5: 723-40.
- Baltimore RS.** *Listeria monocytogenes*. In: Kliegman RM, Behrman RE, Jenson HB and Stanton BF (eds). Nelson Textbook of Pediatrics, 18th ed. Elsevier 2008 (a); 187: 1157-59.
- Baltimore RS.** *Pseudomonas*, *Burkholderia*, and *Stenotrophomonas*. In: Kliegman RM, Behrman RE, Jenson HB and Stanton BF (eds). Nelson Textbook of Pediatrics, 18th ed. Elsevier 2008 (b); 202: 1208-12.
- Baltimore RS, Huie SM , Meek JI, Schuchat A and O'Brien KL.** Early-Onset Neonatal Sepsis in the Era of Group B Streptococcal Prevention. Pediatrics 2001; 108: 1094-98.
- Banerjea MC and Speer CP.** The current role of colony-stimulating factors in prevention and treatment of neonatal sepsis. Semin Neonatol 2002; 7: 335-349.
- Bang AT, Bang RA, Baitule SB, Reddy MH and Deshmukh MD.** Effect of home-based neonatal care and management of sepsis on neonatal mortality: field trial in rural India. Lancet 1999; 354: 1955-61.
- Bathum L, Hansen H, Teisner B, Koch C, Garred P, Rasmussen K et al.** Association between combined properdin and mannose binding lectin deficiency and infection with *Neisseria meningitidis*. Mol Immunol 2006; 43: 473-9.
- Bell AH, Brown D and Holiday HL.** Meningitis in the newborn: a 14 year review. Arch Dis Child 1999; 64: 873.

- Bendel CM.** Colonization and epithelial adhesion in the pathogenesis of neonatal candidiasis. *Semin Perinatol* 2003; 27: 357-364.
- Benitz WE, Gould JB and Druzin ML.** Risk factors for early-onset group B Streptococcal sepsis: Estimation of odds ratios by critical literature review. *Pediatrics* 1999; 103: 1-14.
- Benitz WE, Han MW, Madan A and Ramachandra P.** Serial serum C-reactive protein levels in the diagnosis of neonatal infection. *Pediatrics* 1998; 102: E41.
- Benjamin DK, DeLong ER, Steinbach WJ, Cotton CM, Walsh TJ and Clark RH.** Empirical therapy for neonatal candidemia in very low birth weight infants. *Pediatrics* 2003; 112 (3): 543-547.
- Benjamin DK, Schelonka R, White R, Holley Jr HP, Bifano E, Cummings J et al.** A blinded, randomized, multicenter study of an intravenous *Staphylococcus aureus* immune globulin. *J Perinatol* 2006; 26 (5): 290-5.
- Benjamin DK, Stoll BJ and Fanaroff AA.** Neonatal candidiasis among extremely low birth weight infants: risk factors, mortality rates and neurodevelopmental outcomes at 18 to 22 months. *Pediatrics* 2006; 117: 84-92.
- Betty C and Inderpreet S.** Early onset neonatal sepsis. *The Indian Journal of Pediatrics* 2005; 72 (1): 23-26.

Bizzarro MJ, Raskind C, Baltimore RS and Gallagher PG. Seventy-five years of neonatal sepsis at Yale: 1928-2003. *Pediatrics* 2005; 116 (3): 595-602.

Bonacorsi S, Clermont O, Houdouin V, Cordevant C, Brahimi N, Marecat A et al. Molecular analysis and experimental virulence of French and North American *Escherichia coli* neonatal meningitis isolates: Identification of a new virulent clone. *The journal of infectious diseases* 2003; 187: 1895-1906.

Bouwman LH, Roep BO and Roos A. Mannose-binding lectin: clinical implications for infection, transplantation, and autoimmunity. *Hum Immunol* 2006; 67: 247-256.

Boxer LA. A molecular classification of congenital neutropenia syndromes. *Pediatr Blood Cancer* 2007; 49 (5): 609-614.

Brouwer N, Dolman KM, van Zwieten R, Nieuwenhuys E and Hart M. Mannan-binding lectin (MBL)-mediated opsonization is enhanced by the alternative pathway amplification loop. *Mol Immunol* 2006; 43: 2051-60.

Cakir M, Mungan I and Karahan C. Necrotizing enterocolitis increases the bone resorption in premature infants. *Early human development* 2006; 82 (6): 405-9.

Carcillo JA and Fields AI. Task Force Committee Members. Clinical practice parameters for hemodynamic support of pediatric and neonatal patients in septic shock. *Crit Care Med* 2002; 30: 1365-1378.

- Carrigan SD, Scott G and Tobrizian M.** Toward resolving the challenges of sepsis diagnosis. *Clinical Chemistry* 2004; 50: 1301-1314.
- Carvalho AC and Freeman NJ.** How coagulation defects alter outcome in sepsis. *J Crit Illn* 2000; 9: 51-75.
- Castle V, Andrew M, Kelton J, Giron D, Johnston M and Carter C.** Frequency and mechanism of neonatal thrombocytopenia. *J Pediatr* 1996; 108: 749-55.
- Cedzynski M, Szemraj J and Swierzko AS.** Mannan-binding lectin insufficiency in children with recurrent infections of the respiratory system. *Clin Exp Immunol* 2004; 136: 304–11.
- Center KJ, Reboli AC, Hubler R, Rodgers GL and Long SS.** Decreased vancomycin susceptibility of coagulase-negative Staphylococci in a neonatal intensive care unit: Evidence of spread of *Staphylococcus warneri*. *J Clin Microbiol* 2003; 41 (10): 4660-4665.
- Chaves F, Sanz F, Alba C, Garcia-Alvarez M and Otero JR.** Nosocomial spread of a *Staphylococcus hominis* subsp. *Novobiosepticus* strain causing sepsis in a neonatal intensive care unit. *J clin Microbiol* 2005; 43 (9): 4877-4879.
- Chiesa C, Panero A, Osborn JF, Simonetti AF and Pacifico L.** Diagnosis of neonatal sepsis: A clinical and laboratory challenge. *Clinical Chemistry* 2004; 50 (2): 279-287.

Christensen KK, Dahlander K, Linden V, Svenningsen N and Christensen P. Obstetrical care in future pregnancies after fetal loss in group B streptococcal septicemia: A prevention program based on bacteriological and immunological follow-up. *Eur J Obstet Gynecol Reprod Biol* 2001; 12: 143-150.

Cinel I and Opal SM. Molecular biology of inflammation and sepsis: a primer. *Crit Care Med* 2009;37(1):291–304.

Cordero L and Ayers LW. Duration of empiric antibiotics for suspected early-onset sepsis in extremely low birth weight infants. *Infect Control Hosp Epidemiol* 2003; 24: 662-666.

Crawford SE and Daum RS. Haemophilus Influenzae. In: Kliegman RM, Behrman RE, Jenson HB and Stanton BF (eds). *Nelson Textbook of Pediatrics*, 18th ed. Elsevier 2008; 192: 1173-1177.

Crosdale DJ, Ollier WE, Thomson W, Dyer PA, Jensenius J, Johnson RW et al. Mannose binding lectin (MBL) genotype distributions with relation to serum levels in UK Caucasoids. *Eur J Immunogenet* 2000; 27: 111-17.

Dahl M, Tybjaerg-Hansen A, Schnohr P and Nordestgaard BG. A population-based study of morbidity and mortality in mannose binding lectin deficiency. *J Exp Med* 2004; 199: 1391-1399.

De Benedetti F, Auriti C, D’urbano LE, Ronchetti MP, Rava L, Tozzi A et al. Low serum levels of mannose binding lectin

are a risk factor for neonatal sepsis. *Pediatr Res* 2007; 61: 325-328.

Dean MM, Minchinton RM, Heatley S and Eisen DP. Mannose binding lectin acute phase activity in patients with severe infection. *J Clin Immunol* 2005; 25: 346-52.

Devyatyarova-Johnson M, Rees IH, Robertson BD, Turner MW, Klein NJ and Jack DL. The lipopolysaccharide structures of *Salmonella* serovar Typhimurium and *Neisseria gonorrhoeae* determine the attachment of human mannose binding lectin to intact organisms. *Infect Immun* 2000; 68: 3894-9.

Diehl-Jones WL and Askin DF. Nutritional modulation of neonatal outcomes. *AACN Clinical issues* 2004; 15 (I): 83-96.

Dinareello CA, Shparber M and Kent EF. Production of leukocytic pyrogen from phagocytes of neonates. *J Infect Dis* 2000; 144: 337.

Dollner H, Vatten L and Austgulen R. Early diagnostic markers for neonatal sepsis: comparing C- reactive protein, interleukin-6, soluble tumor necrosis factor receptors and soluble adhesion molecules. *J Clin Epidemiol* 2001; 54: 1251-7.

Dommett RM, Klein N and Turner MW. Mannose-binding lectin in innate immunity: past, present and future. *Tissue Antigens* 2006; 68: 193-209.

Dyer J, Hayani KC, Janda WM and Schreckenberger PC. *Citrobacter sedlakii* meningitis and brain abscess in a premature infant. *Journal of clinical microbiology* 1997; 35 (10): 2686-88.

- Dykes AK, Christensen KK and Christensen.** Chronic carrier state in mothers of infants with group B streptococcal infections. *Obstet Gynecol* 1995; 66: 84-88.
- Dzwonek AB, Neth OW, Thiebaut R, Gulczynska E, Chilton M, Hellwig T, Bajaj-Elliott M, Hawdon J and Klein NJ.** The Role of Mannose-Binding Lectin in Susceptibility to Infection in Preterm Neonates. *Pediatr Res* 2008; 63: 680-685.
- Ehl S, Gering B, Bartmann P and Pohlandt F.** C-reactive protein is a useful marker for guiding duration of antibiotic therapy in suspected neonatal bacterial infection. *Pediatrics* 1997; 99 (2): 216-221.
- El-Mansy HA:** Neutrophil surface antigens (CD11b, CD64) expression as diagnostic markers for bacterial infection in the newborn. Thesis submitted for partial fulfillment of Master degree in Pediatrics, Faculty of Medicine, Ain-Shams University; 2004.
- Elwan S, El-Baz M and Zakaria M.** Procalcitonin as a marker for the diagnosis of neonatal sepsis. *The Gazette of the Egyptian Pediatric Association* 2004; 52 (2): 141-149.
- Enrione MA and Powell KR.** Sepsis, Septic Shock, and Systemic Inflammatory Response Syndrome. In: Kliegman RM, Behrman RE, Jenson HB and Stanton BF (eds). *Nelson Textbook of Pediatrics*, 18th ed. Elsevier 2008; 176: 1094-99.

- Essmat A and George A.** Screening of cases admitted in 80 neonatal units in ministry of health hospitals, during the period from Jan. 95 to June 96. *The Egypt J of Ped* 1998; 15 (1): 178-182.
- Fadel S and Sarazotti M.** Cellular immune responses in neonates. *Int Rev Immunol* 2000; 19: 173-193.
- Fanaroff AA, Korones SB and Wright LL.** Incidence, presenting features, risk factors and significance of late-onset septicemia in very low birth weight infants. *Pediatr Infect Dis J* 1998; 17 (7): 593-8.
- Fergany AL.** Serum Cortisol and thyroid hormone levels in neonates with sepsis. Thesis submitted for partial fulfillment of Master degree in Pediatrics, Faculty of Medicine, Ain-Shams University; 2006.
- Frakking FN, Brouwer N, Zweers D, Merkus MP, Kuijpers TW, Offringa M and Dolman KM.** High prevalence of mannose-binding lectin (MBL) deficiency in premature neonates. *Clin Exp Immunol* 2006; 145: 5-12.
- Frakking FN, Brouwer N, Van Eijkelenburg NK, Merkus MP, Kuijpers TW, Offringa M and Dolman KM.** Low mannose-binding lectin (MBL) levels in neonates with pneumonia and sepsis. *Clin Exp Immunol* 2007; 150: 255-262.

Gadjeva M, Takahashi K and Thiel S. Mannan-binding lectin. a soluble pattern recognition molecule. *Mol Immunol* 2004; 41: 113-21.

Gardner SL and Goldson E. The neonate and the environment: impact on development. In: Merenstein GB and Gardner SL (eds). *Handbook of neonatal intensive care*. 6th ed. Mosby, Elsevier 2006; 13: 273-300.

Garred P, Harboe M, Oettinger T, Koch C and Svejgaard A. Dual role of mannan binding protein in infections: another case of heterosis? *Eur J Immunogenet* 1994; 21: 125-31.

Garred P, Pressler T, Madsen HO, Frederiksen B, Svejgaard A, Hoiby N et al. Association of mannose-binding lectin gene heterogeneity with severity of lung disease and survival in cystic fibrosis. *J Clin Invest* 1999; 104: 431-7.

Garred P, Pressler T, Lanng S, Madsen HO, Moser C, Laursen I et al. Mannose binding lectin (MBL) therapy in an MBL deficient patient with severe cystic fibrosis lung disease. *Pediatr Pulmonol* 2002; 33: 201-7.

Garred P, Larsen F, Madsen HO and Koch C. Mannose-binding lectin deficiency - revisited. *Mol Immunol* 2003; 40: 73-84.

Garred P, Larsen F, Seyfarth J, Fujita R and Madsen HO. Mannose binding lectin and its genetic variants. *Genes Immun* 2006; 7: 85-94.

- Gerdes JS:** Diagnosis and management of bacterial infections in the neonate. *Pediatr Clin N Am* 2004; 51: 939-59.
- Goldblatt D.** Immunization and the maturation of infant immune responses. *Dev Biol Stand* 1998; 95: 125-32.
- Gomella TL, Cunningham MD and Eyal FG .** Sepsis. In: Gomella TL, Cunningham MD and Eyal FG., Editors. *Neonatology management, Procedures, On call problems, Diseases and drugs*, 6th ed., Lange Medical Books/McGraw-Hill, Co, Inc; 2009 ; 117: 665-672 .
- Gonzalez BE, Mercado CK, Johnson L.** Early markers of late-onset sepsis in premature neonates: clinical, hematological and cytokine profile. *J Perinat Med* 2003; 31: 60-68.
- Gordon A and Isaacs D.** Late-onset infection and the role of antibiotic prescribing policies. *Curr Opin Infect Dis* 2004; 17 (3): 231-6.
- Gordon T, Fanaroff AA and Lemons JA.** Early-onset neonatal sepsis in very low birth weight neonates. A report from the national institute of child health and human development; Neonatal Research Network. *J Pediatrics* 1996; 129 (1): 72-80.
- Guardia A and Lozano F.** Mannose binding lectin deficiencies in infectious and inflammatory disorders. *Rev Med Microbiol* 2003; 14: 41-52.

- Guibourdenche J, Bedu A and Petzold L.** Biochemical markers of neonatal sepsis: value of procalcitonin in the emergency setting. *Ann Clin Biochem* 2002; 39: 130-5.
- Guida JD, Kunig AM and Leef KH.** Platelet count and sepsis in very low birth weight neonates: Is there an organism-specific response? *Pediatrics* 2003; 111 (6): 1411-15.
- Haque KN, Khan MA and Kerry S.** Pattern of culture-proven neonatal sepsis in a district general hospital in the United Kingdom. *Infect Control Hosp Epidemiol* 2004; 25 (9): 759-64.
- Hasaneen AFM.** Diagnostic and prognostic value of CD14+, CD16+ monocytes in neonatal sepsis. Thesis submitted for partial fulfillment of Master degree in Pediatrics, Faculty of Medicine, Ain-Shams University; 2004.
- Healy CM, Hulten KG, Palazzi DL.** Emergence of new strains of methicillin-resistant *Staphylococcus aureus* in a neonatal intensive care unit. *Clin Infect Dis* 2004; 39: 1460-6.
- Hengst JM.** The role of C-reactive protein in the evaluation and management of infants with suspected sepsis. *Adv neonatal Care* 2003; 3 (1): 3-13.
- Henrickson KJ, Axtell RA, Hoover SM, Kuhn SM, Pritchett J, Kehl SC and Klein JP.** Prevention of central venous catheter-related infections and thrombotic events in immunocompromised children by the use of vancomycin/ ciprofloxacin /heparin flush solution: a randomized, multicenter, double-blind trial. *J Clin Oncol* 2000; 18: 1269-78.

- Hickey SM and McCracken G:** Postnatal bacterial infections In: Fanaroff AA and Martin RJ (eds). Neonatal Perinatal Medicine: Diseases of the fetus and infant, 6th ed., Mosby 1997; 717-759.
- Hilgendorff A, Schmidt R, Bohnert A, Merz C, Bein G and Gortner L.** Host defence lectins in preterm neonates. Acta Paediatr 2005; 94: 794-9.
- Hintz SR, Kendrick DE, Stoll BJ.** Neurodevelopmental and growth outcomes of extremely low birth weight infants after necrotizing enterocolitis. NICHD Neonatal Research Network. Pediatrics 2005; 115 (3): 696-703.
- Hoal-Van Helden EG, Epstein J, Victor TC, Hon D, Lewis LA, Beyers N et al.** Mannose binding protein B allele confers protection against tuberculous meningitis. Pediatr Res 1999; 45: 459-64.
- Hoffman DJ and Harris MC.** Diagnosis of neonatal sepsis. In: Spitzer AR (ed). Intensive care of the fetus and neonate, 1st ed., Mosby 1996; 940-50.
- Holmskov U, Thiel S and Jensenius JC.** Collections and ficolins: humoral lectins of the innate immune defense. Annu Rev Immunol 2003; 21: 547-78.
- Horrevorts A, Bergman K, Tjernberg I, Kollee L, Breuker I, and Dijkshoorn L.** Clinical and epidemiological investigations of Acinetobacter genomospecies in a neonatal intensive care unit. Journal of clinical microbiology 2000; 33 (6): 1567-72.

- Hoy CM, Wood CM and Hawkey PM.** Duodenal microflora in very low birth weight neonates and relation to necrotizing enterocolitis. *J Clin Microbiol* 2000; 68 (12): 4539-47.
- Hsu KK, Pelton SI and Shaprio DS.** Detection of group B streptococcal bacteremia in simulated intrapartum antimicrobial prophylaxis. *Diagn Microbiol Infect Dis* 2003; 45: 23-7.
- Huang YC, Chou YH, Su LH, Lien R and Lin TY.** Methicillin-resistant *Staphylococcus aureus* colonization and its association with infection among infants hospitalized in neonatal intensive care units. *Pediatrics* 2006; 118 (2): 469-74.
- Illuzzi JL and Bracken MB.** Duration of intrapartum prophylaxis for neonatal group B streptococcal disease: a systematic review. *Obstet Gynecol* 2006; 108: 1254-65.
- Imam SS, Saafan HA and Amin SK.** A new modality for early diagnosis and severity prediction in necrotizing enterocolitis. *The Egyptian Journal of Neonatology* 2004; 5 (1): 10-13.
- Ip WK and Lau YL.** Role of mannose-binding lectin in the innate defense against *Candida albicans*: enhancement of complement activation, but lack of opsonic function, in phagocytosis by human dendritic cells. *J Infect Dis* 2004; 190: 632-40.
- Jack DL, Jarvis GA, Booth CL, Turner MW and Klein NJ.** Mannose-binding lectin accelerates complement activation and increases serum killing of *Neisseria meningitidis* serogroup C. *J Infect Dis* 2001; 184: 836-45.

James L. Wynn and Hector R. Wong . Pathophysiology and Treatment

of Septic Shock in Neonates. Clin Perinatol 2010; (37) 439–479.

Janeway CA, Travers P, Walport M, Shlomchik M. Immunobiology. Garland Science 2005; 6: 50-61.

Jardine L IG and Davies M. Prophylactic systemic antibiotics to reduce morbidity and mortality in neonates with central venous catheters. Cochrane Database Syst Rev 2008; 1: CD006179.

Jensenius JC, Jensen PH, McGuire K, Larsen JL and Thiel S. Recombinant mannan binding lectin (MBL) for therapy. Biochem Soc Trans 2003; 31 (4): 763-7.

Jenson HB and Pollock BH. Meta-analysis of the Effectiveness of intravenous Immune Globulin for prevention and treatment of Neonatal sepsis. Pediatrics 1997; 99 (2): 2-3.

Johnson JR, Oswald E, O'Bryan TT, Kuskowski MA and Spanjaard L. Phylogenetic distribution of virulence-associated genes among Escherichia coli isolates associated with neonatal bacterial meningitis in the Netherlands. J Infect Dis 2002; 185: 774-84.

Joram N, Boscher C, Denizot S, Loubersac V, Winer N, Roze JC, and Guen CG. Umbilical cord blood procalcitonin and C-reactive protein concentrations as markers for early diagnosis of

very early-onset neonatal infection. Arch Dis Child Fetal Neonatal Ed 2006; 91(1): 65-66.

Kaufman D. Fungal infection in the very low birth weight infant. Current opinion in infectious diseases 2004; 17: 253-259.

Kaufman D, Boyle R, Hazen KC, Patrie JT, Robinson M, Donowitz LG et al. Fluconazole prophylaxis against fungal colonization and infection in preterm infants. N Engl J Med 2001; 345 (23): 1660-6.

Kaufman D and Fairchild KD. Clinical microbiology of bacterial and fungal sepsis in very low birth weight infants. Clin Microbiol Rev 2004; 17 (3): 638-680.

Kikuchi K, Takahashi N, Piao C, Itoda I, Hidai H, Yamaura H, Totsuka K et al. Molecular epidemiology of methicillin-resistant Staphylococcus aureus strains causing neonatal toxic shock syndrome-like exanthematous disease in neonatal and perinatal wards. J Clin Microbiol 2003; 41 (7): 3001-6.

Kilpatrick DC. Mannan-binding lectin and its role in innate immunity. Transfus Med 2002; 12: 335-52.

Klein JO and Remington JS. Current concepts of infections of the fetus and newborn infant. In: Klein JO, Remington JS (eds). Infectious Diseases of the Fetus and Newborn Infant. 5th ed. WB Saunders; 2001; 943-998.

Klein NJ. Mannose-binding lectin: do we need it? Mol Immunol 2005; 42: 919-24.

- Koch A, Melbye M, Sorensen P, Homoe P, Madsen HO, Molbak K et al.** Acute respiratory tract infections and mannose-binding lectin insufficiency during early childhood. *JAMA* 2001; 285: 1316-21.
- Krediet TG, Mascini EM, Vlooswijk J, Paauw A, Gerards LJ, and Fleer A.** Molecular epidemiology of coagulase-negative Staphylococci causing sepsis in a neonatal intensive care unit over an 11-year period. *J Clin Microbiol* 2004; 42 (3): 992-95.
- Kuboyama RH, de Oliveira HB and Moretti-Branchini MX.** Molecular epidemiology of systemic infection caused by *Enterobacter cloacae* in a high-risk neonatal intensive care unit. *Infect Control Hosp Epidemiol* 2003; 24: 490-94.
- Kumar Y, Qunibi M, Neal TJ and Yoxal CW.** Time to positivity of neonatal blood cultures. *Arch Dis Fetal Neonatal Ed* 2001; 85: F182-F186.
- Lam BC, Lee J and Lau YL.** Hand hygiene practices in a neonatal intensive care unit: a multimodal intervention and impact on nosocomial infection. *Pediatrics* 2004; 114 (5): 565-71.
- Lau YL, Chan SY, Turner MW, Fong J and Karlberg J.** Mannose-binding protein in preterm infants: developmental profile and clinical significance. *Clin Exp Immunol* 1995; 102: 649-54.
- Lawn JE, Cousens S and Zupan J.** Four million neonatal deaths: When? Where? Why? *Lancet* 2005; 365: 891-900.

- Lawton A.** B-cell development. In: Polin RA, Fox WD, Fletcher J (eds). Fetal and neonatal physiology, 2nd ed. WB Saunders 1998; 1924-30.
- Lee CS, Tang RB, Chung RL and Chen SJ.** Evaluation of different blood culture media in neonatal sepsis. J Microbiol Immunol Infect 2000; 33: 165-168.
- Levi M.** Platelet disorders. Platelets in sepsis. Hematology 2005; 10 (1): 129-31.
- Levy HL.** Escherichia coli in neonates with galactosemia. N Engl J Med 1997; 297: 823-26.
- Levy MM, Fink MP, Marshall JC, Abraham E and Angus D.** International Sepsis Definitions Conference. Crit Care Med 2003; 31(4): 1250-56.
- Lewis D.** Host defense mechanisms against bacteria, fungi, viruses and non-viral pathogens. In: Polin RA, Fox WD, Fletcher J (eds). Fetal and neonatal physiology, 2nd ed. WB Saunders 1998; 1869-1919.
- Lillegard JB, Sim RB, Thorkildson P, Gates MA and Kozel TR.** Recognition of Candida albicans by mannan-binding lectin in vitro and in vivo. J Infect Dis 2006; 193: 1589-97.
- Lin FC, Weisman LE, Troendle J and Adams K.** Prematurity is the major risk factor for late-onset group B Streptococcus disease. J Infect Dis 2003; 188: 267-71.

- Lipscombe RJ, Sumiya M, Hill AV, Lau YL, Levinsky RJ, Summerfield JA et al.** High frequencies in African and non-African populations of independent mutations in the mannose binding protein gene. *Hum Mol Genet* 1992; 1: 709-15.
- Liu F, Liao Q and Liu Z.** Mannose-binding lectin and Vulvovaginal candidiasis. *Int J Gynaecol Obstet* 2006; 92: 43-7.
- Lopez-Sastre JB, Coto-Cotallo GD and Fernandez CB.** Neonatal invasive candidiasis: A prospective multicenter study of 118 cases. *Am J Perinatol* 2003; 20: 153-63.
- Lott JW and Kilb JR.** The selection of antibacterial agents for treatment of neonatal sepsis (or which drug kills which bug?). *Neonatal Pharmacol* 1992; 1: 19-29.
- Lozano F, Suarez B, Muñoz A, Jensenius JC, Mensa J, Vives J and Horcajada JP.** Novel MASP2 variants detected among North African and Sub-Saharan individuals. *Tissue Antigens* 2005; 66: 131-35.
- Luck S, Torny M, d'Agapeyeff K, Pitt A, Heath P, Breathnach A, and Lupetti A, Tavanti A, Davini P et al.** Horizontal transmission of *Candida parapsilosis* candidemia in a neonatal intensive care unit. *J Clin Microbiol* 2002; 40 (7): 2363-69.
- Mackie RI, Sghir A and Gaskins H.** Developmental microbial ecology of the neonatal gastrointestinal tract. *Am J Clin Nutr* 1999; 69: 1035-45.
- Madsen HO, Garred P, Thiel S, Kurtzhals JA, Lamm LU, Ryder LP et al.** Interplay between promoter and structural gene

- variants control basal serum level of mannan-binding protein. J Immunol 1995; 155: 3013-20.
- Marrekchi Z.** Early-onset neonatal infection: experience from Yunisia. 19th scientific congress of the Egyptian Society for Neonatal and Preterm Care (ESNPC); 2007.
- Matasova K, Hudeceva J and Zibolen M.** Bilateral endogenous endophthalmitis as a complication of late-onset sepsis in a premature infant. Eur J Pediatr 2003; 162 (5): 346-7.
- Mathai E, Christopher U, Mathai M, Jana AK, Rose D and Bergstrom S.** Is C-reactive protein level useful in differentiating infected from uninfected neonates among those at risk of infection? Indian J Pediatr 2004; 41(9): 895-900
- Matsushita M, Thiel S, Jensenius JC, Terai I and Fujita T.** Proteolytic Activities of Two Types of Mannose-Binding Lectin-Associated Serine Protease. J Immunol 2000; 165: 2637-42.
- Mayilyan KR, Presanis JS, Arnold JN, Hajela K and Sim RB.** Heterogeneity of MBL MASP complexes. Mol Immunol 2006; 43: 1286-92.
- McKenney WM.** Understanding the neonatal immune system: high risk for infection. Critical Care Nurse 2001; 6 (21): 35-47.
- Miller ME, Seals J, Kaye R and Levitsky LC.** A familial plasma associated defect of phagocytosis: a new cause of recurrent bacterial infection. Lancet 1968; 2: 60-63. Quoted from; **Bouwman LH, Roep BO and Roos A.** Mannose-Binding

Lectin: Clinical Implications for Infection, Transplantation, and Autoimmunity. Human Immunology 2006; 67: 247-256.

Modi N and Carr R. Promising stratagems for reducing the burden of neonatal sepsis. Arch Dis Child Fetal Neonatal Ed 2000; 83: F150-F153

Mussi-Pinhata MM and Rego MA. Immunological peculiarities of extremely preterm infants: a challenge for the prevention of nosocomial sepsis. J Pediatr (Rio J.) 2005; 81: S59-S68.

Mustafa S, Farooqui S, Waheed S and Mahmoud K. Evaluation of C-reactive protein as early indicator of blood culture positivity in neonates. Pak J Med Sci 2005; 21 (1): 69-37.

Neth O, Jack DL, Dodds AW, Holzel H, Klein NJ and Turner MW. Mannose-binding lectin binds to a range of clinically relevant microorganisms and promotes complement deposition. Infect immune 2000; 68: 688-93.

Neth O, Jack DL, Johnson M, Klein NJ and Turner MW. Enhancement of complement activation and opsonophagocytosis by complexes of mannose-binding lectin with mannose-binding lectin-associated serine protease after binding to Staphylococcus aureus. J Immunol 2002; 169: 4430-6.

Neth OW, Bacher u, Das P,et al, Innfluence of mannose-binding lectin genotypes and serostatus in allo-SCT. Bone Marrow transplant 2010.

- Newport MJ.** Unraveling the genetic basis of susceptibility to infectious disease. *Curr Opin Infect Dis* 1997; 10: 233-8.
- Ng PC.** Diagnostic markers of infection in neonates. *Arch Dis Child Fetal Neonatal Ed* 2004; 89(3): F229-F235.
- Ng PC, Lee CH, Fok TF, Chui K, Wong W, Cheung KL and So KW.** Central nervous system candidiasis in preterm infants: limited value of biochemical markers for diagnosis. *J Pediatr Child Health* 2000; 36: 509-10.
- Ng PC, Li K, Leung TF, Wong RP, Li G, Chui KM, Wong E et al.** Early prediction of sepsis-induced DIC with interleukin-10, interleukin-6 and RANTES in preterm infants. *Clin Chem* 2006; 52 (6): 1181-9.
- Nupponen I, Andersson S and Jarvenpaa AL.** Neutrophil CD11b expression and circulating interleukin-8 as diagnostic markers for early-onset neonatal sepsis. *Pediatrics* 2001; 108: 12-17.
- Ochoa TJ and Cleary TG.** *Escherichia Coli* In: Kliegman RM, Behrman RE, Jenson HB and Stanton BF (eds). *Nelson Textbook of Pediatrics*, 18th ed. Elsevier 2008; 197: 1193-96.
- Oddie S and Embleton ND.** Risk factors for early onset neonatal group B streptococcal sepsis: A case control study. *BMJ* 2002; 325: 308.
- Ottolini M, Lungren K and Cason S.** Utility of complete blood count and blood culture screening in the diagnosis of neonatal sepsis. *Pediatr infect Dis J* 2003; 17: 222-235.

- Palazzi DL, Klein JO and Baker CJ.** Bacterial sepsis and meningitis. In: Remington J, Klein J, Baker C, Wilson C (eds). *Infectious Diseases of the fetus and newborn infant*, 6th ed. Elsevier Saunders 2005; pp 247-296
- Pappas BE.** Primary immunodeficiency disorders in infancy. *Neonatal Netw* 1999; 18: 13-22.
- Perencevich EN, Harris AD and Kaye KS.** Physicians acceptable treatment failure rates in antibiotic therapy for coagulase-negative Staphylococcal catheter-associated bacteremia: Implications for reducing treatment duration. *Clin Infect Dis* 2005; 41: 1734-41.
- Perlman JM, Rollins N and Sanchez PJ.** Late-onset meningitis in sick, very-low birth weight infants: Clinical and sonographic observations. *Am J Dis Child* 1992; 146: 1297-1305.
- Petersen KA, Matthiesen F, Agger T, Kongerslev L, Thiel S, Cornelissen K et al.** Phase I safety, tolerability, and pharmacokinetic study of recombinant human mannan-binding lectin. *J Clin Immunol* 2006; 26: 465-75.
- Peterslund NA, Koch C, Jensenius JC, and Thiel S.** Association between deficiency of mannose-binding lectin and severe infection after chemotherapy. *Lancet* 2001; 358: 637-38.
- Polin RA.** The "Ins and Outs" of neonatal sepsis. *J Pediatr* 2003; 143: 13-16.

- Powell KR and Marcy SM.** Laboratory aids for diagnosis of neonatal sepsis. In: Klein JO, Remington JS (eds). Infectious Diseases of the Fetus and Newborn Infants, 4th ed. WB Saunders 1995; 1223-40.
- Procianoy and Silveira RC.** The role of sample collection timing on interleukin-6 levels in early-onset neonatal sepsis. J Pediatr (Rio J) 2004; 80 (5): 407-10
- Puopolo KM.** Bacterial and fungal infections. In: Cloherty JP, Eichenwald EC and Stark AR (eds). Manual of Neonatal Care, 6th ed. Lippincott Williams and Wilkins 2008; 23: 274-322.
- Raju T and Kobler C.** Improving hand washing habits in newborn nurseries. Am J Med Science 1991; 302: 355-58.
- Ramasethu J.** Thrombocytopenia in the newborn. Curr Hematol Rep 2004; 3: 134-42.
- Richardson MD and Carlson P.** Culture- and non-culture-based diagnostics for Candida species. In: Calderone RA (ed). Candida and candidiasis. ASM Press 2002; 26: 387-94.
- Richardson VF, Larcher VF and Price JF.** A common congenital immunodeficiency predisposing to infection and atopy in infancy. Arch Dis Child 1984; 58: 799-802.
- Rijkers GT, Dollekamp EG and Zegers BJM.** The in vitro B-cell response to pneumococcal polysaccharides in adults and neonates. Scand J Immunol 1997; 25: 447-52.

- Roberts IAG and Murray NA.** Neonatal thrombocytopenia: New insights into pathogenesis and implications for clinical management. *Curr Opin Pediatr* 2001; 13 (1): 16-21.
- Rodrigo I.** Changing patterns of neonatal sepsis. *Sri Lanka Journal of Child Health* 2002; 31: 3-8.
- Roilides E, Farmaki E, Evdoridou J, Francesconi A, Kasai M, Filioti J, Tsivitanidou M et al.** *Candida tropicalis* in a neonatal intensive care unit: Epidemiologic and molecular analysis of an outbreak of infection with an uncommon neonatal pathogen. *J Clin Microbiol* 2003; 41 (2): 735-41.
- Ruiz-Contreras J , Uriquia L and Bastero R.** Persistent crying as predominant manifestation of sepsis in infants and newborns. *Pediatr Emerg Care* 1999; 15: 113-115.
- Saiman L, Ludington E, Pfaller M, Rangel-Frausto S, Wiblin RT, Dawson J et al.** Risk factors for candidemia in neonatal intensive care unit patients. The national epidemiology of mycosis survey study group. *Pediatr Infect Dis J* 2000; 19 (4): 319-24.
- Santos IK, Costa CH, Krieger H, Feitosa MF, Zurakowski D, Fardin B et al.** Mannan-binding lectin enhances susceptibility to visceral leishmaniasis. *Infect Immun* 2001; 69: 5212-15.
- Sarvikivi E, Soll DR, Pujol C, Pfaller MA, Richardson M, Koukila-Kahkola P et al.** Emergence of fluconazole resistance in a *Candida parapsilosis* strain that caused infections in a

neonatal intensive care unit. J Clin Microbiol 2005; 43 (6): 2729-35.

Sastry K, Herman GA, Day L, Deignan E, Bruns G, Morton CC and Ezekowitz RA. The human mannose-binding protein gene. Exon structure reveals its evolutionary relationship to a human pulmonary surfactant gene and localization to chromosome 10. J Exp Med 1999; 170: 1175-89.

Schrag SJ, Zell ER, Lynfield R, Roome A, Arnold KE, Craig AS et al. A population-based comparison of strategies to prevent early-onset group B streptococcal disease in neonates. N Engl J Med 2002; 347: 233-239.

Schrag SJ, Hadler JL, Arnold KE, Martell-Cleary P, Reingold A and Schuchat A. Risk factors for invasive, early-onset Escherichia coli infections in the era of widespread intrapartum antibiotic use. Pediatrics 2006; 118 (2): 570-576.

Schuchat A, Robson K and Wenger JD. Bacterial meningitis in the United States in 1995. N Engl J Med 1997; 337: 97-99.

Schuchat A, Deaver RK, Plikaytis BD, Zangwill KM, Mohle BJ and Wenger JD. Multistate case-control study of maternal risk factors for neonatal group B streptococcal disease. The Active Surveillance Study Group. Pediatr Infect Dis J 1994; 13: 623-629.

Schuchat A, Zywicki SS, Dinsmoor MJ, Mercer B, Romaguera J, O'Sullivan MJ et al. Risk Factors and Opportunities for

References

Prevention of Early-onset Neonatal Sepsis: A Multicenter Case-Control Study. *Pediatrics* 2000; 105: 21-26.

Schultz C, Rott C, Temming P, Schlenke P, Moller JC, and Bucsky P. Enhanced interleukin-6 and interleukin-8 synthesis in term and preterm infants. *Pediatr Res* 2002; 51: 317-322.

Scott M. Neonatal sepsis. *Pediatr Infect Dis J* 2005; 87: 613-617.

Seyfarth J, Garred P and Madsen HO. The 'involution' of mannose binding lectin. *Hum Mol Genet* 2005; 14: 2859-69.

Shama HF. Morbidity and mortality in neonatal intensive care units (NICU) of Ain-Shams university hospitals. Thesis submitted for partial fulfillment of Master degree in Pediatrics, Faculty of medicine, Ain-Shams University; 2002.

Shanson DC. Obstetric, perinatal and neonatal infections. In: Shanson DC (ed). *Microbiology in clinical practice*, 3rd ed. Oxford: Butterworth Heinemann 1999; 8: 131-141.

Sheperd CW, Rosenstein NE, Fisher M. Neonatal meningococcal disease in the United States 1990 to 1999. *Pediatr Infect Dis J* 2003; 22: 418-422.

Siegrist CA: Neonatal and early life vaccinology. *Vaccine* 2001; 19: 3331-46.

Siegrist CA, Cordova M, Brandt C, Barrios C, Berney M, Tougne C et al. Determinants of infants responses to vaccines in the presence of maternal antibodies. *Vaccine* 1998; 16: 1409-14.

Sim RB, Clark H, Hajela K and Mayilyan KR. Collectins and host defence. *Novartis Found Symp* 2006; 279: 170-181.

Sinha A, Yokoe D and Platt R. Epidemiology of neonatal infections: experience during and after hospitalization. *Pediatr Infect Dis J* 2003; 22: 244-251.

Smulian JC, Vintzileos AM, Lai YL, Santiago J, Shen-Schwarz S and Campbell WA. Maternal chorioamnionitis and umbilical vein interleukin-6 levels for identifying early neonatal sepsis. *J Matern Fetal Med* 1999; 8: 88-94.

Sourabh Dutta , Rajeshwar Reddy, Samir Sheikh et al :
Intrapartum antibiotics and risk factors for early onset sepsis,
Arch Dis Child Fetal Neonatal Ed 2010;95:F99-F103

Spapen H. Liver perfusion in sepsis, septic shock, and multiorgan failure. *Anat Rec (Hoboken)* 2008;291(6):714–20.

Steffensen R, Thiel S, Varming K, Jersild C and Jensenius JC. Detection of structural gene mutations and promoter polymorphisms in the mannan-binding lectin (MBL) gene by polymerase chain reaction with sequence-specific primers. *J Immunol Methods* 2000; 241: 33-42.

Stoll BJ. Infections of the Neonatal Infant. In: Kliegman RM, Behrman RE, Jenson HB and Stanton BF (eds). *Nelson Textbook of Pediatrics*, 18th ed. Elsevier 2008; 109: 794-811.

Stoll BJ, Gordon T, Korones SB, Shankaran S and Tyson JE. Early-onset sepsis in very low birth weight neonates: a report

References

- from the NICHD Neonatal Research Network. *J Pediatr* 1996; 129: 72-80.
- Stoll BJ and Weisman LE:** Infections in perinatology. *Clin Perinatol* 1997; 24: 1-22.
- Stoll BJ, Hansen N, Fanaroff AA.** Late-onset sepsis in very low birth weight neonates: The experience of the NICHD Neonatal Research Network. *Pediatrics* 2002; 110 (2): 285-291.
- Stoll BJ, Hansen N, Higgins RD et al.** Very low birth weight preterm infants with early onset neonatal sepsis: the predominance of gram-negative infections continues in the NICHD Neonatal Research Network, 2002-03. *Pediatr Infect Dis J* 2005; 24: 635-9.
- Sullivan DJ and Coleman DC.** Molecular approaches to identification and typing of *Candida* species. *American Society for Microbiology* 2002; 28: 427-441.
- Sumits T, Bennett R and Gould J.** Maternal risks for very low birth weight infant mortality. *Pediatr* 1996; 98 (2): 236-241.
- Super M, Thiel S, Lu J, Levinsky RJ and Turner MW.** Association of low levels of mannan-binding protein with a common defect of opsonisation. *Lancet* 1989; 2: 1236-9.
- Swierzko As Atkinson AP, Cedzynski M, et al,** two factors of the lectin pathway of complement, I-ficolin and mannan-binding lection and their associations with prematurity low birthweight and infections in a large conhort of polish neonates *Mol Immunol* 2009 .

- Takahashi K and Ezekowitz RA.** The role of the mannose binding lectin in innate immunity. *Clin Infect Dis* 2005; 41(7): 440-444.
- Thiel S, Holmskov U, Hviid L, Laursen SB and Jensenius JC.** The concentration of the C-type lectin, mannan-binding protein, in human plasma increases during an acute phase response. *Clin Exp Immunol* 1992; 90: 31-5.
- Thiel S, Bjerke T, Hansen D, Poulsen LK, Schiotz PO and Jensenius JC.** Ontogeny of human mannan-binding protein, a lectin of the innate immune system. *Pediatr Allergy Immunol* 1995; 6: 20-23.
- Thiel S, Frederiksen PD and Jensenius JC.** Clinical manifestations of mannan-binding lectin deficiency. *Mol Immunol* 2006; 43: 86-96.
- Thomas J and William N.** PROM. In: James R, Philip J and Charles B (eds). *Danforth's obstetrics and gynecology*, 8th ed. Lippincott-Raven. 1997; 305-307.
- Todd JK.** Staphylococcus. In: Kliegman RM, Behrman RE, Jenson HB and Stanton BF (eds). *Nelson Textbook of Pediatrics*, 18th ed. Elsevier 2008; 180: 1123-30.
- Tollner U.** Early diagnosis of septicemia in the newborn. *Clinical studies and sepsis score. Eur J Pediatr* 1982; 10: 331-337.
- Turner MW.** The role of mannose-binding lectin in health and disease. *Mol Immunol* 2003; 40: 423-429.

- Turner MW and Hamvas RM.** Mannose-binding lectin: structure, function, genetics and disease associations. *Immunogenetics* 2000; 2: 305-322.
- Tynan M and Aronoff SC.** Aspergillus. In: Kliegman RM, Behrman RE, Jenson HB and Stanton BF (eds). *Nelson Textbook of Pediatrics*, 18th ed. Elsevier 2008; 234: 1313-16.
- Valdimarsson H.** Infusion of plasma derived mannan binding lectin (MBL) into MBL deficient humans. *Biochem Soc Trans* 2003; 31 (4): 768-9.
- Valdimarsson H, Stefansson M, Vikingsdottir T, Arason GJ, Koch C, Thiel S et al.** Reconstitution of opsonizing activity by infusion of mannan-binding lectin (MBL) to MBL-deficient humans. *Scand J Immunol* 1998; 48: 124-6.
- Valdimarsson H, Vikingsdottir T, Bang P, Saevarsdottir S, Gudjonsson JE, Oskarsson O, Christiansenn M et al.** Human plasma-derived mannose-binding lectin: a phase-I safety and pharmacokinetic study. *Scand J Immunol* 2004; 59: 97-102.
- Vartzelis G, Theodoridou M and Daikos G.** Brain abscesses complicating Staphylococcus aureus sepsis in a premature infant. *Infection* 2005; 33 (1): 36-8.
- Vermont CL, Hartwig NG and Fleer A.** Persistence of Clones of coagulase-negative Staphylococci among premature neonates in neonatal intensive care units: Two-center study of bacterial genotyping and patient risk factors. *J Clin Microbiol* 1998; 36 (9): 2485-90.

- Vidyasagar D.** A new score to detect neonatal nosocomial infection: "A rule of 14". Crit Care Med 2000; 28: 2166-67.
- Weisman LE, Stoll BJ and Cruess DF.** Early-onset group B streptococcal sepsis: a current assessment. J Pediatr 2001; 121: 428.
- Weisse ME.** Malassezia. In: Kliegman RM, Behrman RE, Jenson HB and Stanton BF (eds). Nelson Textbook of Pediatrics, 18th ed. Elsevier 2008; 233: 1312-13.
- Weisse ME and Aronoff SC.** Candida. In: Kliegman RM, Behrman RE, Jenson HB and Stanton BF (eds). Nelson Textbook of Pediatrics, 18th ed. Elsevier 2008; 231: 1307-10.
- William E. Benitz.** Adjunct Laboratory Tests in the Diagnosis of Early-Onset Neonatal Sepsis Clin Perinatol 37 (2010) 421–438.
- Witkin SS.** Detecting recurrent vulvovaginal candidiasis or vulvar vestibulitis syndrome and method for treating same. 2005.
- World Health Organization (WHO).** Neonatal and perinatal mortality: country, regional and global estimates. Geneva, Switzerland: WHO; 2006.
- Yagupsky P, Menegus MA and Powel KR.** The changing spectrum of group B streptococcal disease in infants: an eleven-year experience in a tertiary care hospital. Pediatr Infect Dis J 2000; 10: 801-4.
- Yousef ARA.** Interleukin-1 and phospholipase A2 in septic newborns. Thesis submitted partial fulfillment of Master degree in Pediatrics, Faculty of Medicine, Ain-Shams university; 2003.

References

Zayed KM. Evaluation of interleukin-6, tumor necrosis factor α and interleukin-1 for early diagnosis of neonatal sepsis. Thesis submitted for partial fulfillment of M.D. degree in Pediatrics, Al-Azhar University; 2001.