

# Integrative Management of Respiratory Illnesses



**by Jeremy Mikolai, ND, and Martin Milner, ND**

***Townsendletter.com***

## Complete References

1. Watkins RR, Lemonovich TL. Diagnosis and management of community-acquired pneumonia in adults. *Am Fam Physician*. 2011;83(11):1299-306.
2. Liu L, Johnson HL, Cousens S, et al. Global, regional, and national causes of child mortality: an updated systematic analysis for 2010 with the time trends since 2000. *Lancet*. 2012;379(9832):2151-2161.
3. Centers for Disease Control Prevention. Faststats. Deaths and mortality [Web page]. <http://www.cdc.gov/nchs/fastats/deaths.htm> . Accessed September 4, 2012.
4. File TM. Treatment of community-acquired pneumonia adult who require hospitalization. In: Basow DS, ed. UpToDate. Waltham, MA; 2012.
5. Marrie TJ. Epidemiology, pathogenesis, and microbiology of community-acquired pneumonia in adults. In: Basow DS, ed. UpToDate. Waltham, MA; 2012.
6. Emerman CL, Dawson N, Speroff T, et al. Comparison of physician judgment and decision aids for ordering chest radiographs for pneumonia in outpatients. *Ann Emerg Med*. 1991;20(11):1215-1219.
7. Lim WS, Baudouin SV, George RC, et al. Pneumonia guidelines committee of the BTS of the BTS standards of care committee. BTS guidelines for the management of community acquired pneumonia in adults: update 2009. *Thorax*. 2009;64(suppl3):1-55.
8. Marrie TJ, Poulin-Costello M, Beecroft MD, Herman-Gnjidic Z. Etiology of community-acquired

- pneumonia treated in an ambulatory setting. *Respir Med*. 2005;99(1):60-65.
9. Marik PE. Norasept II Study Investigators. The clinical features of severe community-acquired pneumonia presenting as septic shock. *J Crit Care*. 2000;15(3):85-90.
  10. Marrie TJ, Peeling RW, Fine MJ, Singer DE, Coley CM, Kapoor WN. Ambulatory patients with community-acquired pneumonia: the frequency of atypical agents and clinical course. *Am J Med*. 1996;101(5):508-515.
  11. Metlay JP, Kapoor WN, Fine MJ. Does this patient have community-acquired pneumonia? Diagnosing pneumonia by history and physical examination. *JAMA*. 1997;278:1440.
  12. Bartlett, JG. Diagnostic approach to community-acquired pneumonia in adults. In: Basow DS, ed. UpToDate. Waltham, MA; 2012.
  13. Metlay JP, Schulz R, Li YH, et al. Influence of age on symptoms at presentation in patients with community-acquired pneumonia. *Arch Intern Med*. 1997;157(13):1453-1459.
  14. Diehr P, Wood RW, Bushyhead J, Krueger L, Wolcott B, Tompkins RK. Prediction of pneumonia in outpatients with acute cough - a statistical approach. *J Chronic Dis*. 1984;37(3):215-225.
  15. University of Washington, Department of Medicine. Advanced physical diagnosis learning and teaching at the bedside [Web page]. <http://depts.washington.edu/physdx/pulmonary/evid1.html>. Accessed September 6, 2012.
  16. Crawford Mechem C. Pulse oximetry. In: Basow DS, ed. UpToDate. Waltham, MA; 2012.
  17. Melbye H, Straume B, Brox J. Laboratory tests for pneumonia in general practice: the diagnostic values depend on the duration of illness. *Scand J Prim Health Care*. 1992;10(3):234-240.
  18. Mortensen EM, Garcia S, Leykum L, Nakashima B, Restrepo MI, Anzueto A. Association of hypoglycemia with mortality for subjects hospitalized with pneumonia. *Am J Med Sci*. 2010;339(3):239-243.
  19. Kolditz M, Höffken G, Martus P, Rohde G, Schütte H, Bals R, Suttorp N, Pletz MW, CAPNETZ study group. Serum cortisol predicts death and critical disease independently of CRB-65 score in community-acquired pneumonia: a prospective observational cohort study. *BMC Infect Dis*. 2012;Apr 13;12:90.
  20. Marrie TJ, Lau CY, Wheeler SL, et al. A controlled trial of a critical pathway for treatment of community-acquired pneumonia. CAPITAL Study Investigators. Community-Acquired Pneumonia Intervention Trial Assessing Levofloxacin. *JAMA*. 2000;283:749.
  21. Mandell LA, Wunderink RG, Anzueto A, et al. Infectious diseases society of America/American thoracic society consensus guidelines on the management of community-acquired pneumonia in adults. *Clin Infect Dis*. 2007;44(suppl 2):S27-S72.
  22. Ebell MH. Predicting pneumonia in adults with respiratory illness. *Am Fam Physician*. 2007;76(4):560-562.
  23. File TM, Marrie TJ. Burden of community-acquired pneumonia in North American adults. *Postgrad Med*. 2010;122(2):130-141.
  24. Niederman MS, Feldman C, Richards GA. Combining information from prognostic scoring tools for CAP: an American view on how to get the best of all worlds. *Eur Respir J*. 2006;27(1):9-11.
  25. Bauer TT, Ewig S, Marre R, et al. CRB-65 predicts death from community-acquired pneumonia. *J Intern Med* 2006;260:93.
  26. File TM. Treatment of community-acquired pneumonia in adults in the outpatient setting. In: Basow DS, ed. UpToDate. Waltham, MA; 2012.

27. Bartlett JG, Dowell SF, Mandell LA, et al. Practice guidelines for the management of community-acquired pneumonia in adults. Infectious Diseases Society of America. *Clin Infect Dis* 2000;31:347.
28. Center for disease control and prevention (CDC); advisory committee on immunization practices. Updated recommendations for prevention of invasive pneumococcal disease among adults using the 23-valent pneumococcal polysaccharide vaccine (PPSV23). *MMWR Morb Mortal Wkly Rep.* 2010;59(34):1102-1106.
29. Centers for Disease Control and Prevention. Key facts about seasonal flu vaccine [Web page]. <http://www.cdc.gov/flu/protect/keyfacts.htm>. Accessed September 6, 2012.
30. Jefferson T, Rivetti D, Rivetti A, Rudin M, Di Pietrantonj C, Demicheli V. Efficacy and effectiveness of influenza vaccines in elderly people: a systematic review [published correction appears in *Lancet*. 2006;367[9515]:986]. *Lancet.* 2005;366(9492):1165-1174.
31. Shapiro ED, Berg AT, Austrian R, et al. The protective efficacy of polyvalent pneumococcal polysaccharide vaccine in older adults. *N Engl J Med.* 1991;325(21):1453-1460.
32. Jackson LA, Neuzil KM, Yu O, et al. Vaccine safety datalink. Effectiveness of pneumococcal polysaccharide vaccine in older adults. *N Engl J Med.* 2003;348(18):1747-1755.
33. Ruede AM, Serpa JA, Matloobi M, Mushtaq M, Musher DM. The spectrum of invasive pneumococcal disease at an adult tertiary care hospital in the early 21st century. *Medicine (Baltimore).* 2010;89(5):331-336.
34. Umoren R, Odey F, Meremikwu MW. Steam inhalation or humidified oxygen for acute bronchiolitis in children up to three years of age. *Cochrane Database Syst Rev.* 2011. Jan 19;(1):CD006435.
35. Singh M, Singh M. Heated, humidified air for the common cold. *Cochrane Database Syst Rev.* 2011. May 11;(5):CD001728.
36. Jackson IM, Barnes J, Cooksey P. Efficacy and tolerability of oral acetylcysteine (Fabrol) in chronic bronchitis: a double-blind placebo controlled study. *J Int Med Res* 1984;12:198-206.
37. Grassi C, Morandini GC. A controlled trial of intermittent oral acetylcysteine in the long-term treatment of chronic bronchitis. *Eur J Clin Pharmacol.* 1976;9:393-396.
38. Roxas M, Jurenka J. Colds and influenza: a review of diagnosis and conventional, botanical, and nutritional considerations. *Alt Med Review.* 2007;12(1):25- 48.
39. Rasmussen JB, Glennow c. Reduction in days of illness after long-term treatment with n-acetylcysteine controlled-release tablets in patients with chronic bronchitis. *Eur Respir J.* 1988;1:351-355.
40. De Flora S, Grassi C, Carati L. Attenuation of influenza-like symptomatology and improvement of cell-mediated immunity with long-term n-acetylcysteine treatment. *Eur Respir J.* 1997;10(7):1535-1541.
41. Millea PJ. N-acetylcysteine: multiple clinical applications. *Am Fam Physician.* 2009;80(3):265-269.
42. Chang JH, Song KJ, Hyun-Jun K, et al. Dietary polyphenols affect MUC5AC expression and ciliary movement in respiratory cells and nasal mucosa. *Am J Rhinol Allergy.* 2010. Mar-Apr;24(2);e59-e62.
43. Kown SH, Nam JI, Kim SI, Kim JH, Yoon J, Kim K. Kaempferol and quercetin, essential ingredients in Ginkgo biloba extract, inhibit interleukin-1 beta-induced MUC5AC gene expression in human airway epithelial cells. *Phytother Res.* 2009;23:1708-1712.
44. Lee SY, Lee HJ, Sikder MA, et al. Resveratrol inhibits mucin gene expression, production and secretion from airway epithelial cells. *Phytother Res.* 2011;(26):1 1082-1087.
45. Lee HJ, Lee SY, Lee MN, et al. Inhibition of secretion, production and gene expression of mucin from

- cultured airway epithelial cells by prunetin. *Phytother Res.* 2011;25:1196-1200.
46. Fiore C, Eisenhut M, Krausse R, et al. Antiviral effects of *Glycyrrhiza spp.* *Phytother Res.* 2008;22:141-148.
  47. Takahara T, Watanabe A, Shiraki K. Effects of glycyrrhizin on hepatitis B surface antigen: a biochemical and morphological study. *Hepatol Res.* 1994;21:601-609.
  48. Sato H, Goto W, Yamamura J, et al. Therapeutic basis of glycyrrhizin on chronic hepatitis B. *Antiviral Res.* 1996;30:171-177.
  49. Eisenburg J. Treatment of chronic hepatitis B. Part 2: Effect of glycyrrhizic acid on the course of illness. *Fortschritt Med.* 1992;110:395-398.
  50. Tandon A, Tandon BN, Bhujwala RA. Treatment of subacute hepatitis with lamivudine and intravenous glycyrrhizin: a pilot study. *Hepatol Res.* 2001;20:1-8.
  51. Orient H, Hansen BE, Willems M et al. Biochemical and histological effects of 26 weeks of glycyrrhizin treatment in chronic hepatitis C: a randomised phase II trial. *J Hepatol.* 2006;45:539-546.
  52. Arase Y, Ikeda K, Murashima N, et al. The long term efficacy of glycyrrhizin in chronic hepatitis C patients. *Cancer.* 1997;79:1494-1500.
  53. Ikeda K, Arase Y, Kobayashi M et al. A long-term glycyrrhizin injection therapy reduces hepatocellular carcinogenesis rate in patients with interferon-resistant active chronic hepatitis C: A cohort study of 1249 patients. *Dig Dis Sci.* 2006;51:603-609.
  54. Kumada H. Long-term treatment of chronic hepatitis C with glycyrrhizin [Stronger Neo-Minophagen C (SNMC)] for preventing liver cirrhosis and hepatocellular carcinoma. *Oncology.* 2002;62 (suppl 1):94-100.
  55. Van Rossum T, Vulto A, Hop W, Schalm W. Glycyrrhizin induced reduction of ALT in European patients with chronic hepatitis C. *Am J Gastroenterol.* 2001;96:2432-2437.
  56. Shibata S. A drug over the millennia: pharmacognosy, chemistry, and pharmacology of licorice. *Yakagaku Zasshi.* 2000;120:849-862.
  57. Crance JM, Biziagos E, Passagot J, van Cuyck-Gandre H, Deloince R. Inhibition of hepatitis A virus replication in vitro by antiviral compounds. *J Med Virol.* 1990 31:155-160.
  58. Gotoh Y, Tada K, Yamada M et al. Administration of glycyrrhizin to patients with human immunodeficiency virus infection. *Igaku no Ayumi.* 1987;140:619-620.
  59. Mori K, Sakai H, Suzuki S et al. Effects of glycyrrhizin (SNMC: stronger Neo-Minophagen C) in hemophilia patients with HIV infection. *Tohoku J Exp Med.* 1989;158:25-35.
  60. Pompei R, Paghi L, Ingianni A, Uccheddu P. Glycyrrhizic acid inhibits influenza virus growth in embryonated eggs. *Microbiologica.* 1983. 6:247-250.
  61. Ko HC, Wei BL, Chiou WF. The effect of medicinal plants used in Chinese folk medicine on RANTES secretion by virus-infected human epithelial cells. *J Ethnopharmacol.* 2006;107:205-210.
  62. Baba M, Shigeta S. Antiviral activity of glycyrrhizin against varicella-zoster virus in vitro. *Antiviral Res.* 1987;7:99-107.
  63. Lampi G, Deidda D, Pinza M, Pompei R. Enhancement of anti-herpetic activity of glycyrrhizic acid by physiological proteins. *Antivir Chem Chemother.* 2001;12:125-131.
  64. Lin JC. Mechanism of action of glycyrrhizic acid in inhibition of Epstein-Barr virus replication in vitro. *Antiviral Res.* 2003;59:41-47.
  65. Numazaki K, Nagata N, Sato T, Chiba S. Effect of glycyrrhizin, cyclosporin A, and tumor necrosis factor

- alpha on infection of U937 and MRC-5 cells by human cytomegalovirus. *J Leukoc Biol.* 1994;55:24-28.
66. Machida H, Nishitani M, Watanabe Y, Yoshimura Y, Kano F, Sakata S. Comparison of the selectivity of antiviral nucleoside analogues. *Microbiol Biol.* 1995. 39:201-206.
67. Pompei R, Flore O, Marccialis MA, Pani A, Loddo B. Glycyrrhizic acid inhibits virus growth and inactivates virus particles. *Nature.* 1979;281:689-690.
68. Wang XQ, Li HY, Liu XY et al. The anti-respiratory syncytial virus effect of active compound of Glycyrrhiza GD4 in vitro. *Zhang Yao Cal.* 2006;29:692-694.
69. Tanaka Y, Kikuzaki H, Fukunda S, Nakatani N. Antibacterial compounds of licorice against upper airway respiratory tract pathogens. *J Nutr Sci Vitaminol.* 2001;47:270-273.
70. Sienkiewicz M, Lysakowska M, Denys P, Kowalczyk E. The antimicrobial activity of thyme essential oil against multidrug resistant clinical bacterial strains. *Microb Drug Resist.* 2012 Apr;18(2):137-48.
71. Sienkiewicz M, Łysakowska M, Ciećwierz J, Denys P, Kowalczyk E. Antibacterial activity of thyme and lavender essential oils. *Med Chem.* 2011 Nov;7(6):674-689.
72. Fabio A, Cermelli C, Fabio G, Nicoletti P, Quaglio P. Screening of the antibacterial effects of a variety of essential oils on microorganisms responsible for respiratory infections. *Phytother Res.* 2007;21:374-377.
73. Salari MH, Amine G, Shirazi MH, Hafezi R, Mohammadypour M. Antibacterial effects of Eucalyptus globulus leaf extract on pathogenic bacteria isolated from specimens of patients with respiratory tract disorders. *Clin Microbiol Infect.* 2006 Feb;12(2):194-196.
74. Ben-Arye E, Dudai N, Eini A, Torem M, Schiff E, Rakover Y. Treatment of upper respiratory tract infections in primary care: a randomized study using aromatic herbs. *Evid Based Complement Alternat Med.* 2011;2011:690346.
75. Helms S, Miller AL. Natural treatment of chronic rhinosinusitis. *Altern Med Rev.* 2006 Sep;11(3):196-207.
76. Hudson J, Vimalanathan S, Kang L, Amiguet VT, Livesey J, Arnason JT, Characterization of antiviral activities in echinacea root preparations. *Pharmaceutical Biol.* 2005;43(9):790-796.
77. Vimalanathan S, Kang L, Amiguet VT, Livesey J, Arnason JT, Hudson J. Echinacea purpurea aerial parts contain multiple antiviral compounds. *Pharmaceutical Biol.* 2005;43(9):740-745.
78. Pleschka S, Stein M, Schoop R, Hudson JB. Anti-viral properties and mode of action of standardized echinacea purpurea extract against highly pathogenic avian influenza virus (H5N1, H7N7) and swine-origin H1N1 (SOIV). *Viral J.* 2009;6(197).
79. Sharma M, Anderson SA, Schoop R, Hudson JB. Induction of multiple pro-inflammatory cytokines by respiratory viruses and reversal by standardized echinacea, a potent antiviral herbal extract. *Antiviral Res.* 2009;83(2):165-170.
80. Sharma M, Schoop R, Hudson JB, Echinacea as an antiinflammatory agent: the influence of physiologically relevant parameters. *Phytother Res.* 2009;23(6):863-867.
81. Hudson JB. The multiple actions of the phytomedicine echinacea in the treatment of colds and flu. *J Med Plant Res.* 2010;4(25):2746-2752.
82. Sharma M, Arnason JT, Hudson JB. Echinacea extracts modulate the production of multiple transcription factors in uninfected cells and rhinovirus-infected cells. *Phytother Res.* 2006;20(12):1074-1079.
83. Fuchs R, Blaas R. Uncoating of human rhinoviruses. *Rev Med Virol.* 2010;20(5):281-297.

84. Sharma M, Vohra S, Arnason JT, Hudson JB. Echinacea extracts contain significant and selective activities against human pathogenic bacteria. *Pharmaceutical Biol.* 2008;46(1-2):111-116.
85. Sharma SM, Anderson M, Schoop SR, Hudson JB. Bactericidal and anti-inflammatory properties of a standardized Echinacea extract (Echinaforce): dual actions against respiratory bacteria. *Phytomedicine.* 2010;17(8-9):563-568.
86. Zakay-Rones Z, Varsano N, Zlotnik M, et al. Inhibition of several strains of influenza virus in vitro and reduction of symptoms by an elderberry extract (*Sambucus nigra* L.) during an outbreak of influenza B Panama. *J Altern Complement Med.* 1995;1:361-369.
87. Sahpira-Nahor O, Zakay-Rones Z, Mamcuoglu M. The effects of SambicoIR on HIV infection in vitro. *Ann Israel Congress Microbiol.* 1995. February 6-7.
88. Morag AM, Mumcuoglu M, Baybikov T, Schlesinger M, Zakay-Rones Z. Inhibition of sensitive and acyclovir resistant HSF-1 strains by an elderberry extract in vitro. Xth International Congress of Virology Jerusalem, Israel. *Phytoparasitica.* 1996;25:1.
89. Zakay-Rones Z, Thom E, Wollan T, Wadstein J. Randomized study of the efficacy and safety of oral elderberry extract in the treatment of influenza A and B virus infections. *J Int Med Res.* 2004;32:132-140.
90. Vlachojannis JE, Cameron M, Chrubasik S. A systematic review on the sambuci fructus effect and efficacy profiles. *Phytother Res.* 2009;24:1-8.
91. Youssef DA, Miller CW, El-Abbassi AM, et al. Antimicrobial implications of vitamin D. *Dermatoendocrinol.* 2011;3(4):220-229.
92. Gombart AF. The vitamin D-antimicrobial peptide pathway and its role in protection against infection. *Future Microbiol.* 2009;4:1151-1165.
93. Veldman CM, Cantorna MT, DeLuca HF. Expression of 1,25-dihydroxyvitamin D(3) receptor in the immune system. *Arch Biochem Biophys.* 2000;374:334-338.
94. Cannell JJ, Vieth R, Umhau JC, et al. Epidemic influenza and vitamin D. *Epidemiol Infect.* 2006;134:1129-1140.
95. Urashima M, Segawa T, Okazaki M, Kurihara M, Wada Y, Ida H. Randomized trial of vitamin D supplementation to prevent seasonal influenza A in schoolchildren. *Am J Clin Nutr* 2010;91:1255-1260.
96. Chan MC, Cheung CY, Chui WH, Tsao SW, Nicholls JM, Chan YO, et al. Proinflammatory cytokine responses induced by influenza A (H5N1) viruses in primary human alveolar and bronchial epithelial cells. *Respir Res.* 2005;6:135.
97. Feindt E, Stroder J. Studies on the antimicrobial effect of vitamin D. *Klin Wochenschr.* 1977;55:507-508.
98. Manaseki-Holland S, Qader G, et al. Effects of vitamin D supplementation to children diagnosed with pneumonia in Kabul: a randomised controlled trial. *Trop Med Int Health.* 2010;15:1148-1155.
99. Cecil CE, Davis JM, Cech NB, Laster SM. Inhibition of H1N1 influenza A virus growth and induction of inflammatory mediators by the isoquinoline alkaloid berberine and extracts of goldenseal (*Hydrastis canadensis*). *Int Immunopharmacol.* 2011 Nov;11(11):1706-1714.
100. Freile ML, Giannini F, Pucci G, et al. Antimicrobial activity of aqueous extracts and of berberine isolated from *Berberis heterophylla*. *Fitoterapia.* 2003;74:702-705.
101. Oh KB, Oh MN, Kim JG, Shin DS, Shin J. Inhibition of sortase-mediated *Staphylococcus aureus* adhesion to fibronectin via fibronectin-binding protein by sortase inhibitors. *Appl Microbiol Biotechnol.* 2006;70:102-106.

102. Birdsall TC, Kelly GS. Berberine: therapeutic potential of an alkaloid found in several medicinal plants. *Altern Med Rev.* 1997;2:94-103.
103. Imanshahidi M, Hosseinzadeh H. Pharmacological and therapeutic effects of *Berberis vulgaris* and its active constituent, berberine. *Phytother Res.* 2008;22:999-1012.
104. Lee CJ, Lee JH, Seok JH, et al. Effects of baicalein, berberine, curcumin and hesperidin on mucin release from airway goblet cells. *Planta Med.* 2003. 69:523-526.
105. Turker AU, Camper ND. Biological activity of common mullein, a medicinal plant. *J Ethnopharmacol.* 2002 Oct;82(2-3):117-125
106. Turker AU, Gurel E. Common mullein (*Verbascum thapsus* L.): recent advances in research. *Phytother Res.* 2005;19:733-739.
107. Saddiqe Z, Naeem I, Maimoona A. A review of the antibacterial activity of hypericum perforatum L. *J Ethnopharmacol.* 2010. Oct 5;131(3):511-521.
108. Knipping K, Garssen J, Van't Land B. An evaluation of the inhibitory effects against rotavirus infection of edible plant extracts. *Virologia.* 2012 Jul 26;9(1):137.
109. Meyre-Silva C, Cechinel-Filho V. A review of the chemical and pharmacological aspects of the genus marrubium. *Curr Pharm Des.* 2010;16(31):3503-3518.
110. Zarai Z, Kadri A, Chobba IB, et al. The in-vitro evaluation of antibacterial, antifungal and cytotoxic properties of *Marrubium vulgare* L. essential oil grown in Tunisia. *Lipids in Health and Disease.* 2001;10:161.
111. Bankova V, Christov R, Kujumgiev A, et al. Chemical composition and antibacterial activity of Brazilian propolis. *Z Naturforsch.* 1995;50c:167-172.
112. Serra J, Escola R. A study on the bacteriostatic activity of propolis. *Deut Lebensm-Rundsch.* 1995;91:242-246.
113. Kujumgiev A, Tsvetkova I, Serkedjieva Y, Bankova V, Christov R, Popov S. Antibacterial, antifungal and antiviral activity of propolis of different geographical origin. *J Ethnopharmacol.* 1999;64:235-240.
114. Nieva MM, Isla MI, Cudmani NG, Vattuone MA, Sampietro AA. Screening of antibacterial activity of amaicha del valle (tucuman, argentina) propolis. *J Ethnopharmacol.* 1999;68:97-102.
115. Hegazi AG, Abd El, Hady FK, Abd Allah FA. Chemical composition and antimicrobial activity of European propolis. *Z Naturforsch.* 2000;55c:70-75.
116. Park EH, Kim SH, Park SS. Anti-inflammatory activity of propolis. *Arch Pharmacol Res.* 1996;19:337-341.
117. Sosa S, Baricevic D, Cinco M, Padovan D, Tubaro A, Della LR. Preliminary investigation on the anti-inflammatory and anti-microbial activities of propolis. *Pharmaceut Pharmacol Lett.* 1997;7:168-171.
118. Mirzoeva OK, Calder PC. The effect of propolis and its components on eicosanoid production during inflammatory response. *Prostaglandins, Leukotrienes Essent Fatty Acids.* 1996;55:441-449.
119. Menezes H, Alvarez JM, Almeida E. Mouse ear edema modulation by different propolis ethanol extract. *Arzneimittelforsch.* 1999;49:705-707.
120. Ozturk F, Kurt E, Cerci M, et al. The effect of propolis extract in the experimental chemical corneal injury. *Ophthalmic Res.* 2000;32:13-18.
121. Banskota AH, Tezuka Y, Kadota S. Recent progress in pharmacologic research of propolis. *Phytother Res.* 2001;15:561-571.
122. Brook WA, Yunus M, Santosham M, et al. Zinc for severe pneumonia in very young children:

- double-blind placebo-controlled trial. *Lancet*. 2004;363:1683-1688.
123. Srinivasan MG, Ndeezi G, Mboijana CK, et al. Zinc adjunct therapy reduces case fatality in severe childhood pneumonia: a randomized double blind placebo-controlled trial. *BMC Medicine*. 2012;10:14.
124. Hemila H, Louhiala P. Vitamin C for preventing and treating pneumonia. *Cochrane Database Syst Rev*. 2007. Jan 24;(1):CD005532.
125. Meydani SN, Han SN, Wu D. Vitamin E and immune response in the aged: molecular mechanisms and clinical implications. *Immunol Rev*. 2005;205:269-284.
126. Yang M, Yuping Y, Yin X, et al. Chest physiotherapy for pneumonia in adults. *Cochrane Database Syst Rev*. 2010. Feb 17;(2):CD006338.
127. Khan H, Saeed M, Muhammad N, Ghaffar R, Khan SA, Hassan S. Antimicrobial activities of rhizomes of *Polygonatum verticillatum*: attributed to its total flavonoidal and phenolic contents. *Pak J Pharm Sci*. 2012 Apr;25(2):463-467.
128. Khan H, Saeed M, Gilani AH, et al. Antipyretic and anticonvulsant activity of *polygonatum verticillatum*: comparison of rhizomes and aerial parts. *Phytother Res*. 2012 May 21. doi:10.1002/ptr.4721.
129. Zhuang SR, Chiu HF, Chen SL, et al. Effects of a Chinese medical herbs complex on cellular immunity and toxicity-related conditions of breast cancer patients. *Br J Nutr*. 2012 Mar;107(5):712-718.
130. Qin Q, Niu J, Wang Z, Xu W, Qiao Z, Gu Y *Astragalus membranaceus* extract activates immune response in macrophages via heparanase. *Molecules*. 2012 Jun 13;17(6):7232-7240.
131. Brush J, Mendenhall E, Guggenheim A, et al. The effect of *Echinacea purpurea*, *Astragalus membranaceus* and *Glycyrrhiza glabra* on CD69 expression and immune cell activation in humans. *Phytother Res*. 2006 Aug;20(8):687-695.
132. Caceres DD, Hancke JL, Burgos RA, Sandberg F, Wikman GK. Use of visual analogue scale measurements (VAS) to assess the effectiveness of standardized *Andrographis paniculata* extract SHA-10 in reducing the symptoms of common cold. A randomized double blind-placebo study. *Phytomedicine*. 1999;6:217-223.
133. Melchior J, Spasov AA, Ostrovskij OV, Bulanov AE, Wikman G. Double-blind, placebo-controlled pilot and phase III study of activity of standardized *Andrographis paniculata* Herba Nees extract fixed combination (Kan Jang) in the treatment of uncomplicated upper-respiratory tract infection. *Phytomedicine*. 2000;7:341-350.
134. Gabrielian ES, Shukarian AK, Goukasova GI, et al. A double blind, placebo-controlled study of *Andrographis paniculata* fixed combination Kan Jang in the treatment of acute upper respiratory tract infections including sinusitis. *Phytomedicine*. 2002;9:589-597.
135. Kligler B, Ulbricht C, Basch E, et al. *Andrographis paniculata* for the treatment of upper respiratory infection: a systematic review by the natural standard research collaboration. *Explore (NY)*. 2006 Jan;2(1):25-29.