PREDICTIVE VALUE OF BLOOD CULTURES POSITIVE FOR COAGULASE-NEGATIVE STAPHYLOCOCCI

To facilitate the interpretation of positive coagulase-negative staphylococci (CoNS) blood culture results, the authors developed a mathematical model using parameters for CoNS infection in patients with central venous catheters (CVCs). Results from 4 studies provided data on paired blood cultures that were used in identifying parameters associated with blood cultures positive for CoNS and in estimating their initial values. The following rates were used to calculate predictive values for positive CoNS blood cultures: true bacteremia, 3%; blood culture contamination, 2%; detection of bacteremia, 80%; and catheter colonization, 2% for blood samples obtained through a CVC. Positive predictive values were 55% for 1 positive culture out of 1 culture performed, 20% for 1 positive culture out of 2 cultures performed, and 5% for 1 positive culture out of 3 cultures performed. For 2 positive cultures out of 2 cultures performed, the positive predictive value was 98% if both samples were obtained through the vein, 96% if 1 sample was obtained through a CVC and 1 through the vein, and only 50% if both samples were obtained through a CVC. The authors recommend the following rules for interpreting cultures positive for CoNS: 1 positive result from 1 culture performed is indeterminate; bacteremia is unlikely when there is only 1 positive result when 2 or more cultures were performed; and CoNS infection is likely when 2 to 3 cultures are positive out of 2 to 3 cultures sampled if a maximum of 1 of these positive cultures was obtained through a CVC.


EFFECT OF VITAMIN E ON RESPIRATORY TRACT INFECTIONS IN ELDERLY NURSING HOME RESIDENTS

Investigators conducted a randomized, double-blind, placebo-controlled trial to determine the effect of 1 year of vitamin E supplementation on respiratory tract infections (RTIs) in elderly nursing home residents. Participants received either placebo (n = 306) or 200 IU of vitamin E daily (n = 311). Study outcomes included incidence of RTIs, number of persons infected and number of days with an RTI, and number of new antibiotic prescriptions for RTIs among all study participants and among completers (n = 451). Vitamin E had no significant effect on antibiotic usage or on incidence or number of days infected with all, upper, or lower RTIs. However, significantly fewer participants in the vitamin E group had 1 or more RTIs: 60% versus 74% for completers (RR, 0.88 [95% CI, 0.75–0.99]; P = 0.04). In addition, there were significantly fewer study group participants who contracted 1 or upper RTIs when compared with the control group: 44% versus 52% of all participants (RR, 0.84 [95% CI, 0.69–1.00]; P = 0.05) and 50% versus 62% for completers (RR, 0.81 [95% CI, 0.66–0.96]; P = 0.01). Vitamin E may have a protective effect on upper RTIs that merits further investigation.


VARICELLA CONTAGIOUSNESS IN VACCINATED PATIENTS

Researchers conducted a population-based, active varicella surveillance project in Los Angeles County, CA, to describe secondary infection rates within households according to disease history and vaccination status of the primary case and household contacts and to estimate varicella vaccine effectiveness. Of 6316 reported cases of varicella, 1602 households with primary cases and 5912 contacts of all ages were included to determine the secondary attack rate. For calculating secondary attack rate according to disease history and vaccination status of the primary contact and contacts aged 1 to 14 years, 2732 contacts were included. The secondary attack rate was highest (71.5%) when both the secondary case and primary contact were unvaccinated, whereas only 15.1% of vaccinated children exposed to unvaccinated primary cases were affected (RR, 0.21 [95% CI, 0.15–0.30]). Following exposure to an unvaccinated case, only 24.0% of secondary cases in vaccinated contacts had 50 or more lesions versus 75.6% of secondary cases in unvaccinated contacts (P < 0.001). Vaccinated cases with at least 50 lesions seemed to be as contagious as unvaccinated cases with fewer than 50 lesions (RR, 0.96 [95% CI, 0.71–1.30]), whereas vaccinated cases with fewer than 50 lesions were only one third as contagious as unvaccinated case with at least 50 lesions (RR, 0.32 [95% CI, 0.19–0.53]). Vaccine effectiveness for preventing all disease was 78.9% (95% CI, 69.7%–85.3%); moderate disease, 92% (50–100 lesions) and 100% (clinician visit); and severe disease, 100%. Varicella vaccination effectively prevents moderate and severe disease and prevents approximately 80% of all disease. Varicella cases in vaccinated children are half as contagious as unvaccinated cases, although contagiousness varies with lesion count.


Copyright 2004 by Turner White Communications Inc., Wayne, PA. All rights reserved.