time, choice of validated patient reported outcome measures (PRO) to assess and monitor ED, and opinion on how ED is currently viewed. RESULTS: A total of 1658 congress delegates participated in the study, of which 1590 met the inclusion criteria. Sixty-one percent of the respondents prescribed a PDE5i as the first course of action when seeing an ED patient. Assessment of contraindications or cardiovascular risk factors, physical examination, blood pressure measurement, and laboratory tests were rarely conducted as a first course of action (1–3%), depending on the assessment/test. The most popular means of assessing and monitoring ED status was via patient interview (68%), as opposed to the use of validated PRO measures. Seventy-six percent of respondents agreed that the large number of men accessing ED medicines through uncontrolled sources represented a true medical issue and 81% agreed that actions to reduce health risks associated with such uncontrolled access to PDE5is were essential. CONCLUSIONS: While the EAU guidelines recommend a diagnostic workup prior to prescribing PDE5is, this study demonstrates that a majority of participating respondents initiate PDE5i treatment in an ED patient initially after a simple patient interview with no prior physical examination or diagnostic testing.

INFECTION—Clinical Outcomes Studies

A BAYESIAN META-ANALYSIS OF THE EFFICACY OF SIX ANTIMICROBIAL AGENTS FOR CONFIRMED STAPHYLOCOCCUS AUREUS COMPLICATED SKIN AND SOFT TISSUE INFECTIONS (cSSTIs) Logman JFS1, Treur MJ2, Verheggen BG1, Heeg BMS1, Stephens J2, Spisseri J3, Simonou D2, Haider S2, Nathwani D3, Van Hout BA4
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OBJECTIVES: Dalbavancin is a new, once weekly, intravenous, glycopeptide antibacterial. In phase III trial, dalbavancin demonstrated comparable efficacy versus linezolid in complicated skin and soft tissue infections (cSSTIs). Teicoplanin is a key antimicrobial comparator in Europe, therefore an indirect comparison based on available published efficacy was performed in “all” Staphylococcus aureus (SA) patients. A Bayesian meta-analysis was conducted to compare success rates of antibacterials versus teicoplanin in cSSTIs due to SA. METHODS: Medline, Embase, and Cochrane databases were searched to identify clinical trials on dalbavancin, daptomycin, linezolid, telavancin, teicoplanin, tigecycline, and vancomycin in cSSTIs. Two independent reviewers completed data extraction, study quality, and heterogeneity assessment. Pooled efficacy estimates were generated based on clinical and microbiological success rates for the all SA cSSTI patients. A random effects model was used with outcome predicted by medication and confounders of success definition, dosing, age and gender. Sensitivity analyses included testing impact of base case confounders, fixed vs random effects models, article quality, and difference in success definition. RESULTS: Of 35 initially identified studies, 14 trials on six treatments with 28 treatment arms (n = 1840) met the inclusion criteria for the MRSA subpopulation and were included in the analysis. No MRSA-specific data were reported for teicoplanin, thus it was not included. MRSA-confirmed cSSTI pooled success rates and 95% credible intervals for the base case analysis were: vancomycin 74.7% (64.1–83.5%), linezolid 94.4% (76.6–90.6%), daptomycin 78.1% (54.6–93.2%), tigecycline 70.4% (48.0–87.6%), dalbavancin 87.7% (74.6–95.4%), and telavancin 83.5% (73.6–90.8%). The estimated difference with vancomycin was significant for dalbavancin, linezolid and telavancin. The finding of lower vancomycin efficacy in MRSA cSSTI was consistent in a variety of sensitivity analyses, indicating the results were robust. CONCLUSIONS: This meta-analysis suggests higher success rates for the novel glycopeptides and linezolid in the treatment of MRSA-confirmed cSSTIs. The uncertainty margins reflect the limited numbers of patients available for some agents and the indirect nature of the treatment comparisons. Further evidence from randomized clinical trials is needed to more definitively establish the value of the newer antimicrobials in MRSA cSSTIs.

ASSESSING ANTIMICROBIAL SUCCESS RATES IN THE TREATMENT OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) COMPLICATED SKIN AND SOFT TISSUE INFECTIONS (cSSTIs): A BAYESIAN META-ANALYSIS
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OBJECTIVES: To compare success rates of newer antimicrobial agents to vancomycin for treatment of MRSA cSSTIs using a Bayesian meta-analysis. METHODS: A systematic literature review was conducted of Medline, Embase, and Cochrane databases to identify clinical trials on dalbavancin, daptomycin, linezolid, telavancin, teicoplanin, tigecycline, and vancomycin in cSSTIs. Data extraction, study quality, and heterogeneity assessments were completed by two independent reviewers. Pooled efficacy estimates were generated based on clinical and microbiological success rates for the MRSA subgroups in the cSTI clinical trials using a Bayesian approach. The base case used a random effects model with outcome predicted by medication and confounders of success definition, dosing, age and gender. Sensitivity analyses included testing impact of base case confounders, fixed vs random effects models, article quality, and difference in success definition. RESULTS: Of 35 initially identified studies, 14 trials on six treatments with 28 treatment arms (n = 1840) met the inclusion criteria for the MRSA subpopulation and were included in the analysis. No MRSA-specific data were reported for teicoplanin, thus it was not included. MRSA-confirmed cSSTI pooled success rates and 95% credible intervals for the base case analysis were: vancomycin 74.7% (64.1–83.5%), linezolid 94.4% (76.6–90.6%), daptomycin 78.1% (54.6–93.2%), tigecycline 70.4% (48.0–87.6%), dalbavancin 87.7% (74.6–95.4%), and telavancin 83.5% (73.6–90.8%). The estimated difference with vancomycin was significant for dalbavancin, linezolid and telavancin. The finding of lower vancomycin efficacy in MRSA cSSTI was consistent in a variety of sensitivity analyses, indicating the results were robust. CONCLUSIONS: This meta-analysis suggests higher success rates for the novel glycopeptides and linezolid in the treatment of MRSA-confirmed cSSTIs. The uncertainty margins reflect the limited numbers of patients available for some agents and the indirect nature of the treatment comparisons. Further evidence from randomized clinical trials is needed to more definitively establish the value of the newer antimicrobials in MRSA cSSTIs.

A SIMULATION-BASED APPROACH TO MODELING THE EFFECTS OF INTERVENTION STRATEGIES ON THE SPREAD OF MENINGOCOCCAL MENINGITIS
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OBJECTIVES: To forecast through computer simulation the effectiveness of medical intervention strategies in reducing the
expected number of cases of meningococcal meningitis in a developing country (Kenya). METHODS: We constructed a simulation model of the spread of meningitis and the effects of intervention strategies with data from peer-reviewed literature. The effectiveness of each intervention strategy was measured in terms of the expected annual number of cases of meningococcal meningitis prevented, relative to a “do nothing” strategy. Each person in a population of 10,000 was modeled daily as a distinct entity with an array of personal and demographic attributes. This approach captured the population heterogeneity and allowed modeling person-to-person interactions. Modeling populations members as distinct entities also allowed us to direct intervention strategies toward at-risk individuals. Simulations using 100 different seeds, representing unique starting years were performed. Intervention strategies were: 1) vaccinating 6-year olds entering school; 2) vaccinating persons ages three to fifteen years (the most at-risk population); and 3) providing chemoprophylaxis (antibiotics for short term protection against invasive cases of the disease) to family members of meningococcal meningitis patients. Vaccination provides protection for a specified period of time (2 years by default), while chemoprophylaxis is protecting only during the course of the drug. A force-of-infection function representing the probability that a person exposed to a carrier becomes infected allows modeling of seasonal variation. RESULTS: Average annual number of cases without treatment was 29.54. Strategy 1 reduced expected annual cases by 4.91 (p < 0.01), strategy 2 by 16.91 (p < 0.01), and strategy 3 by 1.21 (NS). CONCLUSIONS: The strategy of vaccinating only six-year old children and the strategy of vaccinating persons ages three to fifteen years both significantly reduced the number of invasive cases. The strategy of giving chemoprophylaxis to family members of meningococcal meningitis patients did not significantly reduce the number of invasive cases.

A MARKOV MODEL TO ESTIMATE THE IMPACT ON MORBIDITY AND MORTALITY IN PATIENTS WITH CHRONIC HEPATITIS C (CHC) AND NORMAL TRANSMINASES (ALT-N) TREATED WITH PEGYLATED BITHERAPY

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OBJECTIVES: HCV patients with ALT-N have a slower progression to cirrhosis than patients with elevated transaminases (ALT-E). The use and impact of treatment on HCV progression are controversial in this population. We estimated the impact of antiviral treatment on the morbidity and mortality in patients with ALT-N, compared with ALT-E, following different scenarios of treatment. METHODS: A Markov model of CHC with a twenty-year time horizon (2006–2025) was adapted to simulate ALT-N patients (30%) and ALT-E patients (70%) separately. The model takes into account: 1) The faster fibrosis progression rates for higher age, males and ALT-E; 2) The improvement of HCV screening and treatment; 3) The competitive mortality. The model is calibrated on reported HCC mortality (CepiDc). Antiviral treatment effects were incorporated by estimating the likelihood of being screened for HCV (InVS), of being treated (GERS) and of becoming sustained viral responders (literature review). We assumed that patients with ALT-N are treated 80% lower between 2002 and 2004 and 70% lower from 2005 than the ALT-E (HEPATYS). A sensitivity analysis has been assessed. RESULTS: The model showed that the antiviral treatment reduced by 36,000 cirrhosis (35%), 23,100 cirrhosis complications (26%) and 18,000 deaths (23%) on the total HCV population, including 3,000 cirrhosis (20%), 1,200 complications (14%) and 1,000 deaths (13%) in the ALT-N population, despite a probability to be treated 3 to 5 times lower in this population. Moreover, if ALT-N patients are treated in the same proportions than ALT-E, morbidity and mortality could be further reduced by 1,400 cirrhosis (12%), 600 complications (9%) and 500 deaths (8%). CONCLUSIONS: The treatment of CHC patients with ALT-N should have a long-term impact on morbidity and mortality, less important than in ALT-E patients. The sensitivity analysis showed that the proportion of ALT-N is the parameter having the most influence on the results.

IMPACT OF MASS VACCINATION WITH MMRV VERSUS MMR IN FRANCE ON THE EPIDEMIOLOGY OF VARICELLA AND HERPES ZOSTER, USING A DYNAMIC TRANSMISSION MODEL

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OBJECTIVES: To assess the impact of mass vaccination with Priorix-Tetra™ (GlaxoSmithKline Biologicals’ MMRV; measles, mumps, rubella, varicella) vaccine versus Priorix™ (GlaxoSmith-Kline Biologicals’ MMR; measles, mumps, rubella) vaccine on the epidemiology of varicella and zoster. Sustained high coverage with MMRV is possible by replacing MMR. Vaccination can cause an age shift in varicella incidence, and could conceivably increase zoster incidence by removing the trigger for internal boosting of immunity to zoster. METHODS: A dynamic transmission model was developed, accounting for the natural history of varicella and zoster, virus transmission, interactions between varicella and zoster (boosting effects), and age-specific contact rates. The model used peer-reviewed French data. Scenarios were run to evaluate uncertainty in contact patterns within and between age groups. RESULTS: Following the introduction of MMRV, varicella incidence was significantly reduced from 12,571 to 4,859/million persons-years at the post-vaccination equilibrium (after around 30 years). All evaluated contact patterns predicted large decreases in disease incidence. Zoster incidence increased slightly in the first 20 years post-vaccination (e.g. 1860 to 1918/million-person-years in people aged >50 years). This then declined as the vaccinated cohort aged, due to the assumed lower viral reactivation rate with the vaccine. Before vaccination, the highest incidence of varicella was in the 2–4 year olds, but this shifted to the 5–11 year age group (pre-vaccination incidence 2373 versus 3535/million person-years after MMRV). Neither the short term increase in zoster cases nor the age shift to 5–11 year olds were projected to have a significant impact on the burden of the disease. By 80 years post-vaccination, the incidence of zoster had decreased from 3242 to 1326/million person-years and was still decreasing as the vaccinated cohort aged. CONCLUSIONS: Replacement of Priorix™ with Priorix-Tetra™ allows sustained mass vaccination against varicella which is predicted to significantly reduce varicella, and eventually zoster, incidence and disease burden.