

The Type of Intervention and Outcome of Pneumonia Resistance in Various

Countries: A Systematic Review

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INTISARI

Pneumonia masih menjadi salah satu masalah kesehatan utama di beberapa negara di seluruh dunia. Bakteri penyebab pneumonia dianggap sebagai salah satu dari enam patogen utama penyebab kematian, dan menyebabkan banyak resistensi *multidrug* di seluruh dunia. Tinjauan ini bertujuan untuk menganalisis jenis intervensi terhadap pengobatan resistensi pneumonia dan mengevaluasi hasil intervensi.

Tinjauan sistematis studi pustaka dengan menggunakan kata kunci yang ditentukan digunakan untuk menjawab permasalahan penelitian ini. Pencarian artikel menggunakan kata kunci yang ditentukan terkait dengan intervensi dan hasil resistensi pneumonia digunakan pada beberapa database termasuk PubMed dan Science Direct. Kriteria inklusi dan eksklusi ditentukan untuk berbagai macam artikel dan analisis data dilakukan sesuai dengan artikel.

11 artikel melaporkan intervensi dan hasil resistensi pneumonia. Jenis intervensi dan hasil resistensi pneumonia bermacam-macam. Semua artikel menjelaskan intervensi terapeutik, sementara itu, tidak ada artikel yang menjelaskan intervensi lain. Secara rinci, jenis intervensi terapeutik yang dibahas dalam penelitian ini terdiri dari 9 artikel tentang pengobatan penyakit menular (yang meliputi penggunaan obat-obatan) dan 2 artikel tentang diagnostik untuk memandu terapi. Pengobatan penyakit menular menggunakan beberapa kelompok antibiotik seperti cephem (cefiderocol), lipopeptides (colistin), oxazolidinone (linezolid), macrolides (azithromycin), nitroimidazole (metronidazole), lincosamide (clindamycin), non- β -lactams (tigecycline), glikopeptida (vankomisin), penisilin (ampisilin), β -laktam (sulbactam), dan ansamicin (rifampisin). Sedangkan jenis intervensi diagnostik untuk memandu terapi terdiri dari penggunaan *electronic pneumonia clinical decision support tool* (ePNa) dengan skor *Drug Resistance in Pneumonia* (DRIP), ePNa dengan logika *health-care-associated pneumonia* (HCAP), dan *Methicillin-resistant Staphylococcus aureus* (MRSA) *nares screening*. Hasil dari intervensi ini beragam seperti kematian yang lebih sedikit (kematian 14 hari, kematian 28 hari, kematian 30 hari, kematian 60 hari, kematian di rumah sakit), peningkatan kelangsungan hidup (tingkat kesembuhan klinis), durasi resep antibiotik (pengurangan penggunaan antibiotik spektrum luas, penggunaan durasi antibiotik anti-MRSA), karakteristik klinis pasien (cedera ginjal akut, cedera ginjal), kegagalan mikrobiologis, dan tingkat vankomisin. Hasil intervensi membaik atau lebih buruk tergantung pada masing-masing intervensi.

Kata Kunci: Resistensi Pneumonia, Intervensi, Hasil

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ABSTRACT

Pneumonia has still become one major health problem in several countries all over the world. The bacteria caused pneumonia, was considered one of the six leading pathogens for death, and caused much multidrug resistance all over the world. This review aims to analyze the type of intervention toward pneumonia resistance treatment and evaluate the outcome of the intervention.

A systematic review of the literature study using determined keywords was used to answer the problems of this research. The search of articles using determined keywords related to intervention and outcome of pneumonia resistance was used on several databases including PubMed and Science Direct. Inclusion and exclusion criteria were determined to assort the articles and data analysis was carried out according to the articles.

11 articles were retrieved and reported the intervention and outcome of pneumonia resistance. The type of interventions and Outcomes of pneumonia resistance were various. All of the articles describe the therapeutic intervention, meanwhile, there is no article describing other interventions. In detail, the types of therapeutic interventions discussed in the study consist of 9 articles on the treatment of infectious diseases (which includes the use of drugs) and 2 articles on diagnostics to guide therapy. Treatment of infectious diseases uses several groups of antibiotics such as cephem (cefiderocol), lipopeptides (colistin), oxazolidinone (linezolid), macrolides (azithromycin), nitroimidazole (metronidazole), lincosamide (clindamycin), non- β -lactams (tigecycline), glycopeptides (vancomycin), penicillin (ampicillin), β -lactam (sulbactam), and ansamicin (rifampicin). While the type of diagnostic intervention to guide therapy consists of the use of the electronic pneumonia clinical decision support tool (ePNa) with a Drug Resistance in Pneumonia (DRIP) score, ePNa with the logic of health-care-associated pneumonia (HCAP), and Methicillin-resistant *Staphylococcus aureus* (MRSA) nares screening. The outcome of the intervention was various such as fewer death (14-day mortality, 28-day mortality, 30-day mortality, 60-day mortality, hospital mortality), improved survival (clinical cure rate), duration of antibiotic prescribing (reduction in broad-spectrum antibiotic use, anti-MRSA antibiotic duration usage), patients' clinical characteristics (acute kidney injury, renal injury), microbiological failure, and vancomycin level. The outcome of the intervention either improves or worse depending on each intervention.

Keywords: Pneumonia Resistance, Intervention, Outcome