Uji in vitro efek kombinasi sulfadiazina dan trimetoprim terhadap kuman Staphylococcus aureus, escherichia coli, dan salmonella typhi

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Abstrak

Penelitian mengenai aktivitas antimikroba sulfadiazina, trirnetoprim dan kombinasinya (eulfadiazina-trimeto-- prim) terhadap kuman Staphylococcus aureus, Escherichia coil dan Salmonella typhi telah dilakukan di Laboratorium Mikrobiologi, Jurusan Farmasi, FMIPA bekerja sa ma dengan Bagian Mikrobiologi, FKUI, Jakarta. Staphylococcus aureus sebagai suatu kuman uji mewakili kuman positif-gram yang peka terhadap sulfadiazina dan trimetoprim, sedangkan Eacherichia coil dan Salmonella typhi mewakili kuman negatif-gram yang peka terhadap sulfadiazina dan trimetoprim. Tujuan penelitian mi adalah untuk mendapatkan nilai konsentrasi hambat minimum masing-masing dari sulfadiazina dan trimetoprim dan kombinasinya terhadap tiga spesies kuman tersebut di atas. Nilai konsentrasi hambat minimum (KHH) masing-masing dari sulfadiazina dan tnmetoprim dapat diperoleh dengan mudah dengan teknik pengenceran dalam tahung, sedangkan nilai KHM kombinasi sulfadiazina dan trimetopnim dapat diperoleh dengan mudah C Pula dengan metode papan catur. Hasil penelitian menunjukkan bahwa nilai KHM sulfadiazina dan trimetopnim dalam kombinasi secara bermakna lebih rendah daripada nilai KHM maeing-masing dari sulfadiazina dan trimetoprim. Hal mi ju ga menyatakan bahwa kombinasi sulfadiazina dan trimetoprini mempunyai efek sinergistik.

A research on the antimicrobial activities of sulfadiazine, trimethoprim and its combination against Staphylococcus aureus, Escherlchla coil and Salmonella typhi was carried out in the Laboratory of Microbiology, Department of Pharmacy, Faculty of Mathematics and Natural Sciences, in collaboration with the Department of Microbiology, Medical Faculty, University of Indonesia, Jakarta. Staphylococcus aureus as test bacteria represented the gram-positive bacteria which were sensitive to both sulfadiazine and trimethoprim, while Escherlchia coil and Salmonella typhi represented the gram-negative bacteria which were sensitive to both sulfadiazine and trimethoprim. The aim of the research was to look for the minimum inhibitory concentrations of sulfadiazine and tnmethoprim alone and in combination tested against three bacterial species mentioned above. Individual values of the minimum inhibitory concentration (MIC) of sulfadiazine and trimethoprim could be obtained by performing the tube dilution method, while valuesof the MIC of this combination could also he obtained easily by applying the checkerboard method. The results of the test showed that the values of the MIC of sulfadiazine and trimethoprim in combination were significantly lower, compared to the MIC values of sulfadiazine and trimethoprim alone. It was also obvious that the combination of sulfadiazine and trimethoprim showed a synergistic effect.