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Treatment efficacy of 3-day or 7-day administration of faropenem sodium for acute uncomplicated cystitis

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Background: Faropenem (FRPM), the only penem used in Japan, is known to have low inducibility to be resistant to antimicrobials. In the present study, we investigated efficacy of FRPM to acute uncomplicated cystitis (AUC) and the optimal periods of administration with FRPM.

Methods: A randomized, open label, comparative multicenter study was conducted on female outpatients diagnosed with AUC at 35 participating institutions across Japan. The criteria to entry patients and the evaluation of efficacy conformed to the Japanese Guidelines for Clinical Research of Antimicrobial Agents on Urogenital Infections: the First Edition. FRPM with 200 mg, p.o. three times per day was administered to patients allocated to either the 3-day or 7-day administration group (target sample, 100 per group) using the central registration method; a registration form of entried patients were faxed and allocated by the clinical trials office (CREC Net, Kitakyushu, Japan). Bacteriological investigation was conducted at Kyurin Corporation (Kitakyushu, Japan). Bacteriological and clinical efficacies were evaluated 5 to 9 days post-administration of FRPM.

Results: A total of 200 patients were registered between May 2010 and May 2011 (3-day administration: n = 97; median age, 49 years old; age-range, 20-80 years. 7-day administration: n = 103; median age, 47 years old; age-range, 21-81 years). Exclusion criteria comprised insufficient bacterial count at entry, lost to follow-up and withdrawal from the study. Microbiological outcome revealed that 7-day administration (n = 64) was significantly more effective than 3-day administration (n = 62) (eradication: 84.4% vs. 62.9%; persistence: 7.8% vs. 24.2%; replace: 7.8% vs. 12.9%; $p = 0.018$). The clinical outcome tended to be greater in 7-day administration than in 3-day administration, but differences were not significant (82.6% [57/69] vs. 93.0% [(66/71]; $p = 0.061$).

Conclusion: Seven-day administration of FRPM (200mg, p.o. three times per day) provides optimal administration route for AUC.

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Carbapenem therapy for bacteremia due to extended-spectrum β-lactamase-producing *Escherichia coli* or *Klebsiella pneumoniae*: Implications of Ertapenem susceptibility

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Background: Arbapenem susceptibility breakpoints for *Enterobacteriaceae* issued by the *Clinical and Laboratory Standards Institute (*CLSI) had been recently revised and different from those by the European Committee on Antimicrobial Susceptibility Testing. Clinical impact of such a revision remains to be defined.

Methods: A retrospective study evaluated patients treated with a carbapenem for bacteremia caused by extended-spectrum beta-lactamase (ESBL)-producing organisms at two medical centers in Taiwan. Clinical characteristics, outcome, and risk factors of mortality of these patients were analyzed.

Results: Of 251 patients with bacteremia treated by a carbapenem were identified. Among ESBL-producing *E. coli* and *K. pneumoniae*, susceptibility rates of ertapenem were 83.8% and 76.4%, respectively, meropenem 100% and 99.3%, and imipenem 100% and 97.9%. The patients receiving inappropriate therapy had a higher sepsis-related mortality than those with appropriate therapy ($P = 0.002$), irrespective of ertapenem, imipenem or meropenem therapy. However, if the breakpoint of ertapenem susceptibility is 0.5 μg/ml, the mortality of bacteremic episodes due to isolates with MICs ≤0.5 μg/ml is similar to those with MICs >0.5 μg/ml ($P = 0.8$). Multivariate analysis of variables related to sepsis-related mortality revealed that the presence of severe sepsis (odds ratio [OR], 9.70; 95% confidence interval [CI], 3.15-29.86; $P < 0.001$), hospital-onset bacteremia (OR, 5.61; 95% CI, 1.64-19.13; $P = 0.006$), and ertapenem-nonsusceptible isolates (OR, 5.17; 95% CI, 2.03-13.13; $P = 0.001$) were independent risk factors.

Conclusion: Infections due to the causative isolates with ertapenem MIC values ≤0.25 μg/ml were associated with a favorable outcome if treated by a carbapenem. Such a finding supports the rationale of the updated CLSI criteria of carbapenems for *Enterobacteriaceae*.

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Randomized clinical trial of mebendazole, metronidazol and praziquantle in the treatment of giardiasis in Islamic Republic of Iran 2008

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Background: Giardia lamblia (G.L) is a common intestinal parasite associated with social or personal problems. Giardiasis is