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# Shionogi examines mortality in patients with severe bacterial infections

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**The results showed mortality was significantly lower in patients who did not experience delayed appropriate antibiotic therapy**



Shionogi & Co. Ltd., a global, research-driven pharmaceutical company headquartered in Osaka, Japan (Shionogi) has recently announced the publication of a new systematic review in CHEST Journal, funded by Shionogi B.V (European subsidiary), examining the effect of delayed appropriate antibiotic therapy on the outcomes of patients with severe bacterial infections.

The review was carried out to characterize the impact of time to effective therapy for antimicrobials and guide treatment decisions to optimize prompt appropriate antibiotic therapy for patients most at risk. The study found that mortality was significantly lower in patients receiving appropriate therapy without delay compared with those experiencing delay.

With the growing issue of antimicrobial resistance (AMR), it is necessary to limit unnecessary antibiotic use. This systematic review provides support for the recommended approach of early broad-spectrum empiric therapy, followed by de-escalation to targeted treatment, rather than the use of antibiotic escalation strategies. Results also highlight the need for increased availability of rapid techniques to determine antibiotic susceptibility to identify patients with or without drug-resistant infections. This would facilitate rapid de-escalation of broad-spectrum therapy and rapid escalation in cases where empiric therapy is not optimal for the causative pathogen.

The results from this systematic review of 37 studies showed that there was a high prevalence of delayed appropriate antibiotic therapy in hospitalized patients with severe bacterial infections, with over a quarter (27%) experiencing a delay. Mortality was significantly lower in patients who did not experience delayed appropriate antibiotic therapy compared with those who did (OR 0.57 [95% CI, 0.45–0.72]). Mortality was also significantly lower in the no-delay group for patients with infections caused by Gram-negative pathogens.