Background: The current guidelines for skin and soft-tissue infections recommend to start treatment with antibiotics against β-haemolytic streptococci and/or *S. aureus* (GPC) in uncomplicated cellulitis. Gram-negative bacilli (GNB) are regarded as rare causative organisms. The guidelines do not recommend to obtain blood cultures routinely for diagnosis of uncomplicated cellulitis because of low yields of them. Previous studies reported a considerable contamination rate. They recommend blood cultures in patients with some immunosuppressed conditions, immersion injuries or animal bites. The utility of blood cultures in this situation has been argued.

Materials/methods: A retrospective study at a 358-bed community teaching hospital in Japan. Medical records were reviewed for adult inpatients diagnosed with uncomplicated cellulitis between 2015 and 2018. We evaluated the frequency of blood cultures sampling, the positivity rate, the proportion of GNB as causative organisms, and their clinical courses.

Results: We extracted 179 cases of uncomplicated cellulitis (mean age 72.3 years, male 40.8%). Blood cultures were available in 134 cases (75.0%). Multiple sets of blood cultures were taken in 131 cases (97.8%). Forty-three cases revealed to have positive results, in which 2 cases (1.5%) were regarded as contamination. The blood culture positivity was 30.6% (95% CI 22.9 - 39.1%). GNB proved responsible in 6 of the 41 cases with bacteremia. They were *Escherichia coli*, *Morganella morganii*, *Serratia marcescens*, *Achromobacter xylosoxidans* and *Helicobacter sp.*, specifically. There were no significant differences in patients’ characteristics between the GNB and the GPC cases. During empirical therapy, the GNB cases tended to receive inappropriate antibiotics compared with the GPC cases (83.3% vs. 2.9%, p<0.001). The result of blood cultures altered antibiotics regimens; consequently, all the GNB patients had cured and not relapsed. Among the 6 patients, 5 patients didn’t have any particular conditions with which the guidelines recommend blood cultures.

Conclusions: The blood culture positivity was high with a negligible contamination rate compared with the previous studies. Multiple sets of blood cultures may have contributed to these results. GNB caused cellulitis even in immunocompetent patients. Blood cultures demonstrated significant value in optimizing treatment regimens. The guidelines’ recommendations may be reconsidered.