

# PCT may Enhance Antibiotic Management in Elderly Patients



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Falcone M, Bauer M, Ferrer R, Gavazzi G, Gonzalez Del Castillo J, Pilotto A, Schuetz P et al. [Biomarkers for risk stratification and antibiotic stewardship in elderly patients. Aging Clin Exp Res. 2023;35\(5\):925-935. doi:10.1007/s40520-023-02388-w](#)

Providing the most effective treatment for infections among elderly patients can be difficult due to less specific clinical signs and symptoms, leading to both over- and undertreatment. A weakened immune response to infection in the elderly may also influence the kinetics of infection biomarkers. A recent review aimed to provide evidence-based concepts for the safe and efficient use of biomarkers, particularly procalcitonin (PCT), in elderly patients.

## Background and Methods

- Assessing the probability of infection and its resolution may be enhanced by utilizing blood biomarkers that reflect physio-pathological pathways. These aspects may enhance clinical decision-making
- Serum PCT is a host-derived biomarker that rises in bacterial infections and offers prognostic insights, potentially enhancing sepsis management
- A group of experts critically reviewed and discussed the current literature regarding PCT and other biomarkers for risk stratification and antibiotic stewardship in elderly patients
- A consensus was developed on different aspects of biomarker use

## Results

- Experts agree that elderly patients are highly susceptible to infections and the lack of clarity in clinical signs and parameters increases the risk of undertreatment
- Elderly patients are also prone to off-target antibiotic effects, making antibiotic restriction crucial
- Using infection markers like PCT to guide individualized treatment decisions is of interest in elderly patients
- Given the potential of PCT to reduce time on antibiotics in severe infections, its use to guide antibiotic therapy in the elderly is particularly promising since this population has an altered host response due to immune senescence
- PCT is a useful biomarker for evaluating septic complications and unfavorable outcomes in the elderly, aiding in individual decisions for or against antibiotic treatment
- More education is necessary for healthcare providers treating elderly patients regarding the idea of “biomarker-guided antibiotic stewardship”

**In conclusion**, using biomarkers, particularly PCT, has significant potential to enhance the antibiotic management of elderly patients with infections, improving both under- and overtreatment.



*“This narrative review found several interesting clinical settings where PCT-guided therapy may help to reduce antibiotic exposure by either decreasing initiation or duration of treatment in the elderly population,” the study authors concluded.*