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Pharmacokinetics of Fosfomycin measured by in vivo microdialysis in metatarsal bone of patients with osteomyelitis and diabetic foot infections.

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Introduction: Bacterial infections of diabetic feet may lead to loss of the whole leg. Minor traumas or neuropathic plantar ulcers can cause deep underlying infections. Infection control and healing is only possible, if bone resection is sufficient and concentration of antimicrobial agents reach adequate levels. **Methods:** Prospective Study of measuring Fosfomycin in infected bone compared to collateral healthy subcutaneous soft tissue and to serum levels using in vivo microdialysis in patients with diabetic foot osteomyelitis. Nine patients (3 women and 6 men) were included. After the surgical procedure microdialysis probes were inserted percutaneous trough venflons into a drilled hole in the adjacent bone after resection and sequestrectomy., as well in contralateral subcutaneous tissue in order to compare levels including serum concentration during 6 following hours after intravenous injection of Fosfomycin Sandoz 100mg/kg body weight. **Results:** In the first 3-4 hours the bone levels were clearly lower than the levels found in serum and subcutaneous tissue but all levels equilibrated at the latest after 4 hours. The minimal inhibitory concentration for staphylococcus aureus and MRSA was achieved. **Conclusion:** To our knowledge in-vivo microdialysis in bone of diabetic foot patients was successfully performed worldwide for the first time finding sufficient concentrations of parenteral given antimicrobial agents in order to treat infections.