

From the Editor-in-Chief

The theme of this issue of *Clinical Cases in Mineral and Bone Metabolism* is Fracture Healing. Fracture Healing results in regeneration of the fracture site into bone that has similar biomechanical competence as before the injury. This type of regeneration involves stages of tissue differentiation resembling aspects at embryological skeletal development. The contemporary consensus and understanding of fracture healing implicates a large number of factors at the molecular level in conjunction with physiological and biomechanical principles. The duration of each of the healing phases can vary significantly, depending on the location and characteristics of the fracture, patient-related factors, and the chosen treatment. The standard tissue engineering approach to provide solutions for impaired fracture healing includes the utilization of growth factors, scaffolds, mesenchymal stem cells, and mechanical environment, the so called "diamond concept". While physical and pharmacological interventions are not given substantial attention.

While most fractures heal with conventional therapy, there is potential for permanent deficits and complications with this method, particularly among patients at risk for poor healing. Although fracture-healing is one of the most consistent and reliable reparative responses of human tissue, its impairment and failure can lead to devastating clinical consequences. Likewise, osteoporosis and advanced age can contribute to delayed or impaired fracture union. Pre-clinical studies support that physical and pharmacological agents can augment fracture union. However, antifracture drugs are not routinely used by orthopaedic surgeons to improve the healing in fractured patients.

Given the growing amount of expertise in the area of Fracture Healing, appropriate endpoints for studies of medicinal products for improving fracture union in patients with osteoporosis have been issued. In the future we are going to witness an increased interest of the orthopaedic community toward the use of drugs in the bone healing process.

The **OrtoMed Workshop** explored basic and clinical information on the regulation of skeletal repair by biologically active physical and pharmacological agents. Workshop participants approached this information from clinical, physiological, and cellular perspectives and identified areas in which further investigation is needed.

And of course, this is an appropriate moment for review. The output from the Workshop sessions forms the basis of this report. In this issue of *Clinical Cases of Mineral and Bone Metabolism* you will find Mini-reviews on epidemiological, molecular, cellular, and therapeutic approaches to Fracture Healing.

The Journal also features two Original Articles, one on the role of calcidiol on mineral metabolism and the other on the use of raloxifene in healthy middle-aged men.

We trust that you will find this issue of *Clinical Cases in Mineral and Bone Metabolism* to be of particular interest.

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