Intravital Microscopy for the Study of the Microcirculation in Various Disease States

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Abstract

***The study of the microcirculation by intravital microscopy represents a sophisticated research tool to analyse complex biological interactions and disease mechanisms as well as to develop and test novel prophylactic and therapeutic approaches aimed at the prevention or attenuation of manifestation of disease-associated microvascular disorders and cellular dysfunction. This may include pathogenesis of atherosclerosis and thrombosis, fibrosis and cirrhosis as well as hypertension, diabetes and tumorogenesis. In addition, using the microscopic technique, circulatory and cellular disorders in surgical diseases and procedures, such as shock and resuscitation, ischaemia/reperfusion and transplantation, trauma, sepsis and inflammation, as well as burn injury and wound healing, may be analysed. With the background of the increasing knowledge of molecular and cellular mechanisms of disease evaluated* **in vitro**, *the technique of intravital microscopy ideally allows to bridge over from those* **in vitro** *observations to test their potential relevance* **in vivo.**

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