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Special Issue Reprint

Arteriogenesis and Therapeutic Neovascularization

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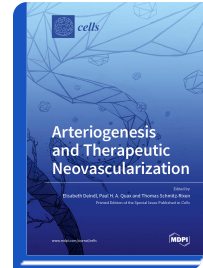
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For many years, arteriogenesis, also called collateral formation, has been regarded as being a beneficial process to restore blood flow to distal tissues in occluded arteries. Therefore, it is frequently referred to in relation to therapeutic angiogenesis. Despite the big clinical potential and the many promising clinical trials on arteriogenesis and therapeutic angiogenesis, the exact molecular mechanisms involved in the multifactorial processes of arteriogenesis are still not completely understood. A better understanding is needed in order to define successful clinical therapies. In this Special Issue, multiple aspects of arteriogenesis and therapeutic angiogenesis will be addressed, ranging from the role of inflammatory processes and immune cells, to growth factors, microRNAs and environmental factors like hypoxia. Therapeutic angiogenesis will also be discussed in relation to the atherosclerosis and intraplaque angiogenesis in hypoxic lesions, as well as specific forms of arteriogenesis in relation to spinal cord blood supply and aorta surgery. The effects of exercise, a frequently prescribed therapy for PAD patients, on arteriogenesis are also discussed. Overall, the papers in this Special Issue on arteriogenesis and therapeutic angiogenesis provide important new insights in the underlying pathophysiological mechanism of these complex processes and may be helpful to define a successful future intervention directed at therapeutic angiogenesis.



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