Abstract:
Platelets have a central function in repairing vascular damage and stopping acute blood loss. They are equally central to thrombus formation in cardiovascular diseases such as myocardial infarction and ischaemic stroke. Beyond these classical prothrombotic diseases, immune mediated pathologies such as haemolytic uraemic syndrome (HUS) or paroxysmal nocturnal haemoglobinuria (PNH) also feature an increased tendency to form thrombi in various tissues. It has become increasingly clear that the complement system, part of the innate immune system, has an important role in the pathophysiology of these diseases. Not only does complement influence prothrombotic disease, it is equally involved in idiopathic thrombocytopenic purpura (ITP), an autoimmune disease characterised by thrombocytopenia. Thus, there are complex interrelationships between the haemostatic and immune systems, and platelets and complement in particular. Not only does complement influence platelet diseases such as ITP, HUS and PNH, it also mediates interaction between microbes and platelets during systemic infection, influencing the course of infection and development of protective immunity. This review aims to provide an integrative overview of the mechanisms underlying the interactions between complement and platelets in health and disease.