Bench-to-bedside review: Circulating microparticles - a new player in sepsis?

Submitted by Emmanuel Lemoine on Fri, 07/18/2014 - 09:43

Titre
Bench-to-bedside review: Circulating microparticles - a new player in sepsis?

Type de publication
Article de revue

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Editeur
BioMed Central

Type
Article scientifique dans une revue à comité de lecture

Année
2010

Langue
Anglais

Date
2010/10/01

Numéro
5

Volume
14

Titre de la revue
Critical Care

ISSN
1364-8535

Mots-clés
Emergency Medicine [5], Intensive / Critical Care Medicine [6]

Résumé en anglais
In sepsis, inflammation and thrombosis are both the cause and the result of interactions between circulating (for example, leukocytes and platelets), endothelial and smooth muscle cells. Microparticles are proinflammatory and procoagulant fragments originating from plasma membrane generated after cellular activation and released in body fluids. In the vessel, they constitute a pool of bioactive effectors pulled from diverse cellular origins and may act as intercellular messengers. Microparticles expose phosphatidylserine, a procoagulant phospholipid made accessible after membrane remodelling, and tissue factor, the initiator of blood coagulation at the endothelial and leukocyte surface. They constitute a secretion pathway for IL-1β and up-regulate the proinflammatory response of target cells. Microparticles circulate at low levels in healthy individuals, but undergo phenotypic and quantitative changes that could play a pathophysiological role in inflammatory diseases. Microparticles may participate in the pathogenesis of sepsis through multiple ways. They are able to regulate vascular tone and are potent vascular proinflammatory and procoagulant mediators. Microparticles' abilities are of increasing interest in deciphering the mechanisms underlying the multiple organ dysfunction of septic shock.

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http://okina.univ-angers.fr/publications/ua3567 [7]

DOI
10.1186/cc9231 [8]

Lien vers le document
http://dx.doi.org/10.1186/cc9231 [8]

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Publié sur Okina (http://okina.univ-angers.fr)