LYMPHODYNAMICS IN THE FETUS AND NEWBORN

C. Bellini, F. Boccardo, E. Bonioli, C. Campisi

Servizio di Patologia Neonatale, Dipartimento di Pediatria (CB,EB), and Dipartimento di Chirurgia (FB,CC), Discipline Chirurgiche Morfologiche e Metodologie Integrate (DiCMI), U.O.S. Dipartimentale di Microchirurgia dei Linfatici, Azienda Ospedale-Università San Martino, Università di Genova, Istituto G. Gaslini, Genova, Italy

ABSTRACT

Fluid is distributed among three major fluid spaces: plasma, interstitial fluid, and intracellular fluid. The distribution of fluid in each of these compartments is dramatically different in the fetus and newborn compared to the adult. In addition, the amniotic fluid that surrounds the fetus may also be considered an extension of the extracellular space of the fetus. The purpose of this review is to discuss the complex mechanism that regulates volume in the fetus and newborn as well as the regulation of fluid distribution between the plasma and interstitial fluid, while placing special emphasis on the role the lymphatic system plays in mediating and maintaining this distribution.