

Value of central or mixed venous O₂ saturation in guiding treatment in the intensive care unit.

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Since the publication by Rivers et al. on the value of early goal-directed therapy for septic shock, utilizing among others the central venous O₂ saturation to guide treatment and showing a survival benefit of such policy, the use of O₂ saturation in venous blood has been propagated to guide the hemodynamic management of a variety of critical disorders. This can be done with and without supplemental cardiac output measurements. Pitfalls include the disparity between central and mixed venous O₂ saturation depending on varying admixture of venous blood including that from the coronary sinus, particularly in shock. Although a central or mixed venous SO₂ below 70 and 65%, respectively, may denote inadequacy of O₂ delivery for tissue needs, the adequacy of cardiac output is only indirectly assessed, and should be supplemented by other signs of organ malperfusion including lactic acidemia and oliguria. The value of (continuous) measurements in predicting fluid responsiveness of the heart, ie an increase in cardiac output with fluid loading, is currently under investigation. A low saturation could be helpful when cardiac function is relatively normal but when cardiac failure or cardiogenic shock supervenes. The therapeutic consequences, in terms of fluid loading or inotropic therapy, of relatively low saturations thus remain unclear. In the mean time the saturations are used at the bedside in the intensive care unit to supplement other observations in judging the adequacy of cardiac output.