

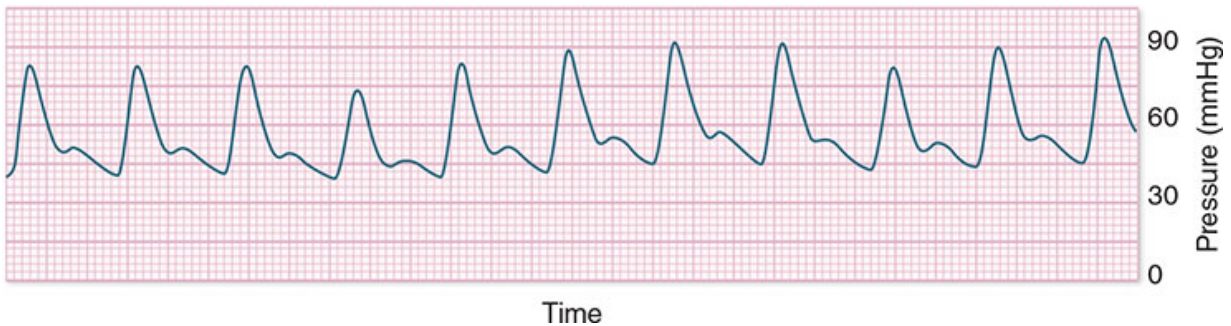


FIGURE 300-4 Pulse pressure change during mechanical ventilation in a patient with shock whose cardiac output will increase in response to intravenous fluid administration. The pulse pressure (systolic minus diastolic blood pressure) changes during mechanical ventilation in a patient with septic shock.

In hypotensive patients with clinical evidence of increased cardiac output, a search for causes of decreased SVR is appropriate. These patients usually require targeted initial volume resuscitation (as described above) to achieve euvolemia, and often require vasopressors to maintain vascular tone. The most common cause of high-cardiac-output hypotension is sepsis ([Chap. 304](#)). Other causes include liver failure, severe pancreatitis, adrenal insufficiency, burns, trauma, anaphylaxis, thyrotoxicosis, and peripheral arteriovenous shunts.

Insertion of lines for monitoring and caring for critically ill patients may be necessary. Over the last two decades, management of shock has improved to the point where not all patients will require central venous and arterial lines. However, if a patient demonstrates that shock is not quickly resolving, as indicated by a persistent need for vasopressors and/or repeated measurement of the JVP and/or central venous O_2 saturation, then insertion of an arterial line for monitoring blood pressures and arterial blood gases, as well as a central venous line for administration of vasoactive agents and monitoring of the JVP and/or central venous O_2 saturation, may be required. Ideally, lines should be inserted under sterile conditions using a protocolized checklist approach, and lines should be removed as soon as they are no longer necessary to avoid risk of line-associated infection.

In summary, the most common categories of shock are hypovolemic, cardiogenic, and high-cardiac-output with decreased