Reduced mortality with noninvasive hemodynamic monitoring of shock.

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PURPOSE: This study compared clinical outcomes associated with exposure to

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pressure waveform analysis for cardiac output (APCO), or no central monitoring (NCM) in patients with shock.

MATERIALS AND METHODS: We assessed 6929 consecutive patients from 2003 to 2006 within a surgical intensive care unit of a university hospital, identifying 237 mechanically ventilated patients with shock.

RESULTS: Adjusted for severity of illness, use of APCO monitoring, compared with other options, was associated with reduced intensive care unit mortality (odds ratio [OR], 0.37; 95% confidence interval [CI], 0.18-0.77) and 28-day mortality (OR, 0.43; 95% CI, 0.22-0.85). Other monitors were not associated with changes of 28-day mortality (CVC: OR, 0.63; 95% CI, 0.34-1.17; PAC: OR, 0.78; 95% CI, 0.36-1.69) or were associated with increased risk (NCM: OR, 2.29; 95% CI, 1.14-4.61). There were significant differences in the fluid and vasoactive drug prescriptions among the groups.

CONCLUSIONS: This study supports an association between the use of APCO monitoring and reduction in mortality in shock compared with traditional methods of monitoring. Although it is impossible to exclude the role of unrecognized/unrecorded differences among the groups, these findings may result

from differences in supportive care, directed by monitor technology.