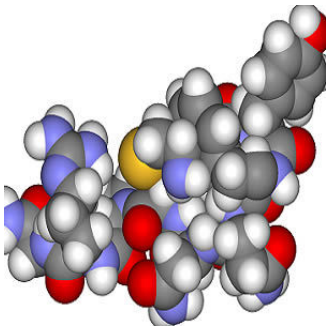
ICU
MANAGEMENT & PRACTICE

Study: Vasopressin vs. Norepinephrine in Septic Shock - VANISH trial



A multicentre randomised trial to compare early use of vasopressin compared to norepinephrine to treat septic shock found no reduction in the number of kidney failure-free days compared with norepinephrine. The results of the VAsopressin vs. Noradrenaline as Initial therapy in Septic sHock (VANISH) trial are published in JAMA.

Anthony Gordon, the Chief Investigator of the VANISH trial and Professor of Anaesthesia and Critical Care,
Imperial College London, and colleagues randomly assigned patients who had septic shock requiring vasopressors despite fluid resuscitation within a maximum of 6 hours after the onset of shock to vasopressin and hydrocortisone (n = 101), vasopressin and placebo (n = 104), norepinephrine and hydrocortisone (n = 101), or norepinephrine and placebo (n = 103). The researchers measured the primary outcome of kidney failure-free days during the 28-day period after randomisation, namely the proportion of patients who never developed kidney failure and the median number of days alive and free of kidney failure for patients who did not survive, who experienced kidney failure, or both.

Results
409 patients (median age, 66 years)
Median time to study drug administration: 3.5 hours after diagnosis of shock

Vasopressin group
Survivors who never developed kidney failure: 94/165 (57 percent)
Median number of kidney failure-free days for patients who did not survive, who experienced kidney failure: 9 days

Norepinephrine group
Survivors who never developed kidney failure: 93/157 patients (59 percent)
Median number of kidney failure-free days for patients who did not survive, who experienced kidney failure: 13 days

There was less use of renal replacement therapy in the vasopressin group than in the norepinephrine group. Mortality rates in the two groups were not significantly different.

Among adults with septic shock, the early use of vasopressin compared with norepinephrine did not improve the number of kidney failure-free days. Although these findings do not support the use of vasopressin to replace norepinephrine as initial treatment in this situation, the confidence interval included a potential clinically important benefit for vasopressin, and larger trials may be warranted to assess this further,â€ the authors write.

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When asked to comment on the clinically important benefit for vasopressin which warranted further assessment, Dr. Gordon told *ICU Management and Practice* that the main outcome of this trial was a combination of survival and duration of kidney failure and there was no difference between treatment groups. However, there were improvements in some secondary outcomes related to kidney function, when patients received vasopressin. Most importantly less patients needed renal replacement therapy and they had greater urine output and lower creatinine levels over the first week in the vasopressin group. As the 95% confidence interval of the main outcome still includes a potential clinical benefit for vasopressin, larger trials would be required to test this.

Dr. Gordon also said that the results of the VANISH trial will probably not change routine first-line pressors for septic shock, i.e. norepinephrine. However, as less patients required renal replacement therapy (RRT) when treated early with vasopressin, then clinicians may consider starting vasopressin early in patients whose kidney function is deteriorating. This may reduce the later need for RRT which is important for patients. RRT requires additional catheters to be inserted into large veins in the neck or groin, and as well as being an additional bleeding and infection risk can reduce the patient's opportunity to mobilize. Reducing RRT rates is also important for clinicians, as it is both labour intensive and costly.

Source: JAMA
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