Introduction:
Vasodilatory shock is a common syndrome with high mortality. Despite established care protocols, regional differences in treatment remain. We sought to characterize these differences using data from the recently published ATHOS-3 study [1].

Methods:
Individual patient data were analyzed at baseline and at 48h for regional differences in demographics, clinical characteristics, and treatment patterns, and grouped according to four geographical areas: the United States (US), Canada (CA), Europe (EU) and Australasia (AU). P-values were calculated by Kruskal-Wallis tests for continuous data and chi-square tests for categorical data. Subsequent temporal analysis compared changes in the treatment of shock, indexed by changes in patient acuity level.

Results:
Regional differences existed with respect to BMI (p=0.0076), albumin (p<0.0001), CVP (p=0.0383), MELD score (p=0.0191), APACHE II score (p=0.0007) and SOFA score (p=0.0076). Baseline norepinephrine (NE) and NE equivalent doses were significantly higher in EU (p<0.0001 and p=0.0494, respectively), and utilization of vasopressin was correspondingly lower (p<0.0001). At baseline, stress dose steroids were utilized to a greater extent in the US and CA (p=0.0011). Temporal analysis revealed differences in the utilization of vasopressin and steroids with changes in patient acuity: in EU, increasing acuity was associated with a lower utilization of vasopressin, and in CA, increased acuity was associated with a lower utilization of steroids. Steroid utilization was higher with increased level of acuity in AU and the US.

Conclusion:
Significant differences in the treatment of vasodilatory shock exist globally, with important implications: (a) there are widespread differences of best practices, (b) heterogeneity may render global studies of shock difficult to interpret, and (c) outcomes may be improved through appropriate use of adjunctive therapies like non-catecholamine vasopressors or corticosteroids.

References: