incidence of pH values less than 2.5. As summarized in Cohen’s recent editorial, this criterion is still used when identifying patients at risk. With “incidence of low pH” in mind both mean pH and mean H⁺ appear irrelevant. The real question is “Does the therapeutic regimen significantly alter the incidence of patients ‘at risk’?” In Stoelting’s original paper, nonparametric statistics (chi-square) were appropriately used and demonstrated a different incidence only when antacids were administered. His tables of mean acidity in the groups above and below pH 2.5 (whether mean pH or H⁺) would thus appear peripheral to the primary concern. Their most useful purpose has probably been to stimulate this correspondence.

In conclusion, I would put in a plea to editors and writers. We cannot eliminate statistics, but let us at least use them sparingly and in the certain knowledge that they at least represent something.

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53:86, 1980

Averaging Acidity Values

To the Editor:—Reading the correspondence concerning acidity values between Giesecke and Pace et al., generated a certain sense of déjà vu. This matter was fully ventilated in Anesthesia in April 1978 and in the British Medical Journal in 1977. Despite the claim to the contrary, neither pH nor hydrogen ion concentration is an independent variable. For the conventional pH electrode and meter assembly the true independent variable is the millivolt difference across the glass membrane between the silver–silver chloride reference electrode in the glass and the calomel electrode. From this millivolt scale both pH and hydrogen ion concentration can be derived. Any random errors of measurement for any sample will be normally distributed around the mean millivolt measurement of that sample, as multiple measurements of that sample will confirm. In hydrogen ion concentration terms this is a log-normal distribution.

Presumably the purpose of the debated measurements was to determine the effects of different premedicants upon the acid output of the stomach. Therefore, pooling the measurement data obtained from a number of samples to derive this biologic response, that is, the mean acid output or average quantity of hydrogen ions secreted by the gastric mucosa, requires the use of the arithmetic mean of these values; the quantity of hydrogen ions is the molar concentration of hydrogen ions per liter multiplied by the volume secreted.

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References


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Central Venous Catheter Placement for Cardiopulmonary Bypass

To the Editor:—I was interested in the solution offered by Rasmussen and Husum for the problem encountered with central venous pressure (CVP) monitoring by pulmonary-artery catheter during total cardiopulmonary bypass. In my experience, the design of the pulmonary-artery catheter places the