able 1–1. Compensations to primary acid-base disturbances in the North American view [13].

|  |  |  |
| --- | --- | --- |
| disorder | primary change | compensatory response |
| metabolic acidosis |  a[] | 1.2 mmHg decrease in PaCO2 for every 1 mmol/l fall in a[] |
| metabolic alkalosis |  a[] | 0.7 mmHg elevation in PaCO2 for every 1 mmol/l rise in a[] |
| respiratory acidosis |  PaCO2 |  |
| acute |  | 1 mmol/l elevation in a[] for every 10 mmHg rise in PaCO2 |
| chronic |  | 3.5 mmol/l elevation in a[] for every 10 mmHg rise in PaCO2 |
| respiratory alkalosis |  PaCO2 |  |
| acute |  | 2 mmol/l decrease in a[] for every 10 mmHg fall in PaCO2 |
| chronic |  | 5 mmol/l decrease in a[] for every 10 mmHg fall in PaCO2 |

able 1–2. Upper and lower limits of the standard 95% normal reference intervals for the acid-base variables in arterial blood.

|  |  |  |
| --- | --- | --- |
| Acid-base variable | lower limit | upper limit |
| pH | 7.35 | 7.45 |
| PaCO2 | 35 mmHg | 45 mmHg |
| BE | -3 mmol/l | 3 mmol/l |
| a[] | 21 mmol/l | 27 mmol/l |

able 1–3. Classification of acid-base disorders in the Scandinavian view. The signs ‘-’, ‘+’ and ‘=’ indicate an observed value being respectively below, above or within its 95% normal reference interval. See also Error: Reference source not found.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | pH | PaCO2 | BE | classification |
| 1 | - | + | = | respiratory acidosis |
| 2 | - | + | + | partly compensated respiratory acidosis |
| 3 | = | + | + | compensated respiratory acidosis OR compensated metabolic alkalosis OR combined respiratory acidosis and metabolic alkalosis |
| 4 | + | + | + | partly compensated metabolic alkalosis |
| 5 | + | = | + | metabolic alkalosis |
| 6 | + | - | + | combined respiratory and metabolic alkalosis |
| 7 | + | - | = | respiratory alkalosis |
| 8 | + | - | - | partly compensated respiratory alkalosis |
| 9 | = | - | - | compensated respiratory alkalosis OR compensated metabolic acidosis OR combined respiratory alkalosis and metabolic acidosis |
| 10 | - | - | - | partly compensated metabolic acidosis |
| 11 | - | = | - | metabolic acidosis |
| 12 | - | + | - | combined respiratory and metabolic acidosis |
|  | = | = | = | normal |
| x |  |  |  | unclassifiable |