

Kyoto Protocol and Inhalation Anesthetics

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To the Editor

Global warming is the increase of temperature in earth's surface and atmosphere. The Kyoto Protocol is an international agreement to reduce climate change regarding six main greenhouse gases as followings: Carbon dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulphur hexafluoride (SF₆).

Carbon dioxide is a representative gas that leads to greenhouse effect. However, halogenated anesthetics are more potent in global warming. Global warming potential (GWP) is a measure of contribution to raise earth's temperature, relative to carbon dioxide. GWP₂₀ is the time integrated value of GWP for 20 years¹. Carbon dioxide is the standard value, and several volatile inhalation agents are as followings: sevoflurane-349, isoflurane-1401, desflurane-3714, nitrous oxide-289 and carbon dioxide-1(standard).

Anesthesia is inevitable because it is performed only based on medical requirement. How can we reduce the use of halogenated inhalation anesthetics? First, tight scavenging system must be adapted for reuse and complete remove of exhaled gas. Second, low fresh gas flow can reduce the consumption of volatile anesthetics during general anesthesia. Third, new anesthetic gas without global warming is ideal like xenon².

REFERENCES

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