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Re-evaluation of paper bag rebreathing for Hyperventilation syndrome

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Background: Paper Bag Rebreathing PBR as a treatment for Hyper Ventilation Syndrome HVS had not recommended since 1990 by the risk of hypoxic exposure. The risk, however, might be preventable by the administration of oxygen in the paper bag.

Objectives: To confirm the safety and effectiveness of PBR with administration of oxygen for HVS.

Materials & Methods: Four healthy adult volunteers were examined with monitoring end-tidal carbon dioxide (EtCO₂) by capnometer accompanied by nasal cannula, and with monitoring SpO₂ attached on the finger. The examinees were forced to continue hyper ventilation with respiratory rate of 30/minute, and we started PBR therapy with 2 l/minute of oxygen in the vinyl bag of 3 l attached to the examinees' mouth and nose when the EtCO₂ revealed down to 20 mmHg. The examinees continued hyper ventilation with respiratory rate of 30/minute even after PBR started, and their symptoms such as numbness and lightheadedness were observed every 30 seconds.

Result: EtCO₂ gradually elevated just after PBR start. Symptoms of numbness and lightheadedness disappeared in 2 minutes after start of PBR when EtCO₂ elevated to above 27 mmHg. EtCO₂ increased to 40 mmHg within 5 minutes and SpO₂ was kept above 99% in all examinees.

Conclusion: PBR with administration of oxygen is thought to be safe and effective treatment for HVS.

Biography

Masanobu Kishikawa is a renowned personality in the related field of hyperventilation syndrome. He is currently working at Fukuoka City Hospital in Japan. He has published several research papers and recently working on paper bag rebreathing for hyperventilation syndrome.

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