

公募助成「腎不全病態研究助成」研究サマリー

研 究 名 称	腎性貧血を含む重度貧血時の脳内酸素代謝状態および輸血による変化
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<p>Background: Hemodialysis (HD) patients frequently suffer from severe anemia caused by various hemorrhagic disorders in addition to renal anemia. Intradialytic blood transfusion has been sometimes performed; however, cerebral oxygenation changes associated with this procedure remain unclear.</p> <p>Methods: Sixteen HD patients with severe anemia who required intradialytic blood transfusion were included (12 men and 4 women; mean age, 64.8 ± 9.8 years). Cerebral regional saturation of oxygen (rSO₂) was monitored using near-infrared spectroscopy, and cerebral fractional oxygen extraction (FOE) was calculated before and after HD. Twenty-five HD patients with well-maintained hemoglobin levels were included as a control group.</p> <p>Results: Cerebral rSO₂ values were significantly lower in HD patients with severe anemia than those in the control group ($42.4 \pm 9.9\%$ vs. $52.5 \pm 8.5\%$, $p = 0.001$). Following intradialytic blood transfusion (385 ± 140 mL of concentrated red blood cells), hemoglobin levels significantly increased (from 7.2 ± 0.9 to 9.1 ± 1.1 g/dL, $p < 0.001$), and cerebral rSO₂ values significantly improved after HD (from 42.4 ± 9.9 to $46.3 \pm 9.0\%$, $p < 0.001$). Cerebral FOE before HD in HD patients with severe anemia was significantly higher than those in the control group (severe anemia; 0.56 ± 0.10, control; 0.45 ± 0.08, $p < 0.001$). After HD with intradialytic blood transfusion, these values significantly decreased (after HD: 0.52 ± 0.09, $p = 0.002$ vs. before HD: 0.56 ± 0.10).</p> <p>Conclusion: HD patients with severe anemia represented cerebral oxygen metabolism deterioration, which could be significantly improved by intradialytic blood transfusion.</p>	