

【Overview presentation】

The AD/PD™ 2023 International Conference on Alzheimer's and Parkinson's Diseases (AD/PD™ 2023)

Effects of combined pre-analytical sample handling variables on plasma β -amyloid level measured using a fully automated immunoassay system

Authors	<p>Kazuto Yamashita¹, Kengo Ishiki¹, Shunsuke Watanabe¹, Masahiro Miura¹, Shigeki Iwanaga¹, and Toshiyuki Sato¹</p> <p>¹ Central Research Laboratories, Sysmex Corporation</p>
Overview presentation	<p>Objectives</p> <p>Plasma β-amyloid ($A\beta$) is considered as one of the promising blood-based biomarkers for Alzheimer's disease. However, several studies have revealed that pre-analytical sample handling might affect plasma $A\beta$ levels. Therefore, it is important to understand the pre-analytical conditions which can accurately quantify plasma $A\beta$ levels. In these previous studies, the effects of pre-analytical variables such as time to centrifugation, storage temperature, and time to measurement were assessed individually. It has not been established whether the combinations of pre-analytical variables, each of which did not have effects on plasma $A\beta$ levels individually, affect plasma $A\beta$ levels or not. Here, we present the effect of the combined pre-analytical sample handling variables on plasma $A\beta_{42}/A\beta_{40}$ ratio.</p> <p>Methods</p> <p>Whole blood samples were obtained from healthy volunteers using K₂EDTA tubes. The combined effects of pre-analytical sample handling variables, such as time to centrifugation and measurement, and storage temperature, on plasma $A\beta_{42}/A\beta_{40}$ ratio were evaluated. Plasma $A\beta_{40}$ and $A\beta_{42}$ were quantified using a fully automated immunoassay system (HISCL™ series).</p> <p>Results</p> <p>Plasma $A\beta_{42}/A\beta_{40}$ ratios satisfied our criteria when whole blood samples were stored for 2 hours at room temperature (RT) or 6 hours at 4 °C before centrifugation. It was also satisfied our criteria when plasma samples were stored for 6 hours at RT or 4 °C</p>

	<p>before measurement. These conditions did not affect the plasma Aβ42/Aβ40 ratios regardless of whether they were assessed individually or in combination.</p> <p>Conclusion</p> <p>We have confirmed that plasma Aβ42/Aβ40 ratio measured on HISCL series was not affected even when several pre-analytical sample handling variables were combined, suggesting that the tolerance of pre-analytical sample handling variables assessed individually can be adopted to the combinations of them without any effect.</p>
Session	SYMPOSIUM: FLUID BIOMARKERS, IMAGING (OO095)