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PROTON MRS STUDY IN THAI METHAMPHETAMINE USERS
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Background. Cerebral injury from MA use and HIV infection are well established. Frontal or the executive brain functions are most affected in MA abusers with development neurological conditions of inability to attend and concentrate slowness in thinking and moving. HIV infection, on the other hand, is thought to be indirect process due to neurons are not infected by the virus. Cells including brain microphages, microglia is infected and a reactive astrocytosis is often present.

Methods. Fifteen healthy volunteers, 15 HIV seropositive patients with no history of MA use, 15 MA users with no HIV infection and 15 MA users who are HIV infected during the next 15 months. This is cross-sectional study, each participant will undergo MRI/MRS scans and neuropsychological evaluation. We present results of single voxel proton MRS in MA users’ brain.

Results. Significant reduction (p = 0.041) for neuronal marker, N-acetylaspartate in the frontal white matter was observed with mean NAA/Cr for healthy control and MA users of 0.855 and 0.746, respectively. Similar reduction (p = 0.028) was also observed in the basal ganglia with mean NAA/Cr for healthy control and MA users of 0.687 and 0.548 respectively.

Conclusions. The results demonstrated significant neuronal loss in methamphetamine users.