Bio-PTS(Biomarker discovery for Post Traumatic Syndrome) Research Group

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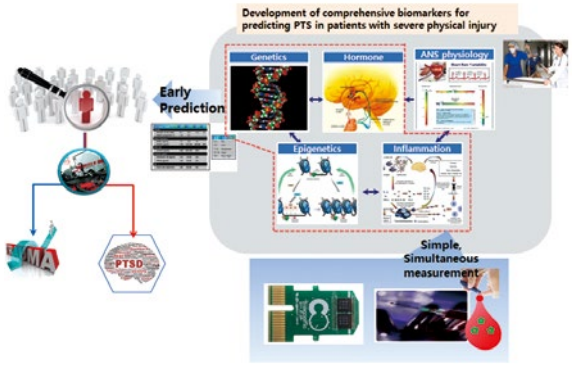
Major research goals

Traumatic physical injury affects millions of people each year and it is a leading cause of posttraumatic syndrome(PTS) including depression, anxiety disorders, and posttraumatic stress disorder(PTSD), which are associated with poor outcome of physical health. Our study aims to develop a biomarker-based diagnostic algorithm for PTS after physical injury the government support(National Research Foundation).



Major research topics

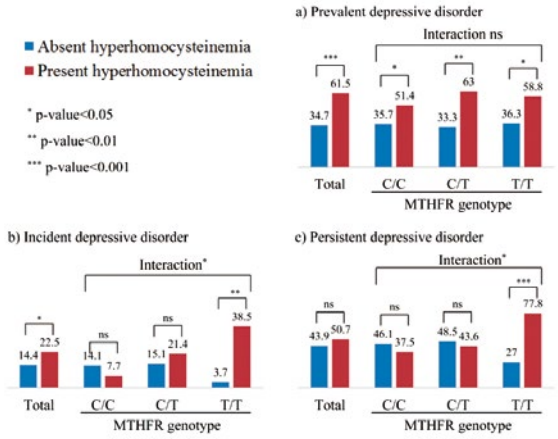
- Examine potential biomarkers of various PTS symptoms including depression, anxiety and PTSD and their multiple interactive effects
- Estimate the diagnostic and predictive validities of biomarkers for early detection of PTS
- Develop a biomarker-based diagnostic algorithm for PTS after physical injury.

Major achievements

1. Interactive effect of stressful life events and 5-HTTLPR s alleles with stressful life events as biomarker for depression in patients with acute coronary syndrome(ACS) at acute phase(within 2 weeks) while interactive effect of social support deficits and 5-HTTLPR s alleles as biomarker for depression in patients with ACS at chronic phase(at 1 year)
2. Hyperhomocysteinemia irrespective of MTHFR genotype as a biomarker for depression in ACS patients at acute phase(within 2 weeks) while hyperhomocysteinemia only in the presence of MTHFR TT genotypes as biomarker for depression in ACS patients at chronic phase(at 1 year)
3. Higher IL-1b, IL- 1b – 511 T allele and interactive effect of higher IL-b level and IL- 1b – 511 T allele

as biomarker for depression in ACS patients at acute phase(within 2 weeks)

Representative figures of major achievements



Depressive status by hyperhomocysteinemia and methylenetetrahydrofolate reductase(MTHFR) genotype.

Major relevant publications

1. Kim J-M, Stewart R, Kang H-J, et al. Depression following acute coronary syndrome: Time-specific interactions between stressful life events, social support deficits, and 5-HTTLPR. Psychother Psychosom 2017;86:62-64
2. Kang H-J, Stewart R, Bae K-Y, et al. Predictive value of homocyteine for depression after acute coronary syndrome. Oncotarget 2016:7:42:69032-69040.
3. Kang H-J, Bae K-Y, Kim S-W, et al. Effects of interleukin-6, interleukin-18, and statin use, evaluated at acute stroke, on post-stroke depression during 1-year follow-up. Psychoneuroendocrinology 2016:72:156-160.
4. Kang H-J, Bae K-Y, Kim S-W, et al. Relationship between Interleukin-1β and depressive disorder after acute coronary syndrome. Prog Neuropsychopharmacol Biol Psychiatry 2017:72:55-59.
5. Kim J-M, Kang H-J, Bae K-Y, et al. Associations of tumor necrosis factor-α levels and polymorphisms with depression in acute coronary syndrome. Int J Cardiol 2016:212:76-78.

Research networks