DNA-methylation regulatory gene mutation is an important unfavorable prognostic factor in acute myeloid leukemia

- 308 patients with acute myeloid leukemia
- next-generation sequencer Ion PGM™
- DNA-methylation regulatory gene mutation analysis

43.8% cases with mutations in DNA-methylation regulatory genes (135/308)

- More frequent in older patients ($p<0.0001$)
  - patients with intermediate cytogenetic risk ($p<0.0001$)
  - patients with high white blood cell count ($p=0.0032$)

- Unfavorable prognostic factor for overall survival in cases overall ($p=0.0018$)
  - in patients aged ≤ 70 years, with intermediate cytogenetic risk, and in FLT3-ITD-negative ($p=0.0409$)

- 26.7% of patients have two or more DNA-methylation regulatory gene mutations
  - prognosis worsened with increasing number of mutations

- Independent unfavorable prognostic factor for overall survival ($p=0.0424$)

Ryotokuji et al., Haematologica, 2016