The equation of lung cancer risk estimates for ever-smokers based on Korean lung cancer risk model

1) Estimate total hazard ratio using the β-coefficient estimates from cox proportional hazard model

A = EXP {
  $0.14618 * [(Age-Mean_{age}) - 0]$
  $- 0.00242 * [(Age-Mean_{age})^2 - 87.00]$

  $+ 0.0 * (Sex)$ if male
  $- 0.38713 * (Sex - 0.922)$ if female

  $+ 0.17456 *$ (square roof of lack-years of smoking – 4.5314)

  $+ 1.03818 *$ (smoking status – 0.624) if current smokers
  $+ 0.62246 *$ (smoking status – 0.115) if past smokers with <5 years since cessation
  $+ 0.34404 *$ (smoking status – 0.168) if past smokers with 5-14.9 years since cessation
  $+ 0.0 *$ (smoking status)   if past smokers with ≥15 years since cessation

  $+ 0.0 *$ (physical activity)
  $- 0.06768 *$ (physical activity – 0.697)

  $+ 0.0 *$ (drinking)
  $+ 0.05952 *$ (drinking – 0.883)

  $+ 0.26841*(BMI - 0.024)$ if BMI <18.5
  $+ 0.0*(BMI)$ if BMI 18.5–22.9
  $- 0.24695*(BMI - 0.362)$ if BMI 23.0–24.9

  $+ 0.0 * (COPD)$ if chronic pulmonary obstructive disease, none
  $+ 0.36037 *(COPD - 0.021)$ if chronic pulmonary obstructive disease, yes

  $+ 0.0 *$ (emphysema)   if emphysema, none
  $+ 0.36037 *$(emphysema – 0.0025)   if emphysema, yes

  $+ 0.0 *$ (Pneumoconiosis)   if Pneumoconiosis, none
  $+ 0.36037 *$(Pneumoconiosis – 0.0005)   if Pneumoconiosis, yes

  $+ 0.0 * (IPD)$ if interstitial pulmonary disease, none
  $+ 0.36037 *(IPD - 0.0009)$ if interstitial pulmonary disease, yes
  }

2) Calculate the 6.6-year of lung cancer probability
  $P = 1 - S(t|t=6.6)^E$, where $S(t|t=6.6) = 0.99622$