

ADR Data Analysis

Hephaes Chuen Chau

2022-03-16

Data import and pre-processing

We first import the dataset and inspect its structure via:

```
library(readxl)
dataset <- read_excel("Data_PD1.xlsx")

## Warning in read_fun(path = enc2native(normalizePath(path)), sheet_i = sheet, :
## Expecting numeric in AZ201 / R201C52: got a date

## New names:
## * Dosage -> Dosage...29
## * Dosage -> Dosage...31
## * `Date of 1st dose` -> `Date of 1st dose...32`
## * `No. of doses` -> `No. of doses...33`
## * `No. of deferrals` -> `No. of deferrals...34`
## * ...

str(dataset)

## tibble [296 x 57] (S3: tbl_df/tbl/data.frame)
##  $ My Onc no                : chr [1:296] "P82" "P102" "P278" "P22" ...
##  $ Age (at first dose)       : num [1:296] 73 77 66 69 54 85 67 68 55 74 ...
##  $ Gender                    : chr [1:296] "M" "M" "M" "M" ...
##  $ Ht (at baseline)          : chr [1:296] "174" "168" "158.30000000000001" "175" ...
##  $ Wt (at baseline)          : chr [1:296] "74" "68.5" "63" "64.5" ...
##  $ BMI (at baseline)         : chr [1:296] "24.441802087462015" "24.3" "25.14" "21.06" ...
##  $ Smoking                   : chr [1:296] "Y" "N" "N/A" "N" ...
##  $ Alcohol                   : chr [1:296] "N" "N" "N/A" "N" ...
##  $ Drug Allergy               : chr [1:296] "N" "Ramipril, Augmentin" "N" "N" ...
##  $ Autoimmune Dz             : chr [1:296] "N" "N" "N" "N" ...
##  $ Chronic Infection (Hep,HIV,Shingles: chr [1:296] "N" "N" "N" "N" ...
##  $ Medical History - Chronic Condition: chr [1:296] "Hypothyroidism (on thyroxine), hypercholesterol
##  $ Charlson Comorbidity Index : logi [1:296] NA NA NA NA NA NA ...
##  $ HBsAg                     : chr [1:296] "N" "Y" "N" "N" ...
##  $ HCV Ab                    : chr [1:296] "N/A" "N" "N" "N/A" ...
##  $ Tumor Type - Diagnosis     : chr [1:296] "NSCLC" "HCC" "GI - Gallbladder" "Cholangioma" .
##  $ Squamous/Adeno NSCLC      : chr [1:296] "Adeno" "N/A" "N/A" "N/A" ...
##  $ Tumor Staging              : chr [1:296] "4" "1" "4" "N/A" ...
##  $ Metastasis                 : chr [1:296] "N" "N" "Y" "Y" ...
##  $ PDL1 Exp (50% or above or below) : chr [1:296] "Y" "N/A" "Y" "N/A" ...
##  $ EGFR                      : chr [1:296] "N" "N/A" "N/A" "N/A" ...
##  $ Previous Chemo             : chr [1:296] "N" "Y" "Y" "Y" ...
##  $ Previous TKI               : chr [1:296] "N" "Y" "N" "N" ...
```

## \$ Baseline Antihypertensive	: chr [1:296] "N" "Y" "N" "N" ...
## \$ Baseline Anti-arrhythmic	: chr [1:296] "N" "N" "N" "N" ...
## \$ Baseline Antipsychotic	: chr [1:296] "N" "N" "N" "N" ...
## \$ Baseline Anticonvulsant	: chr [1:296] "N" "N" "N" "N" ...
## \$ Baseline Statin	: chr [1:296] "Rosuvastatin" "N" "N" "N" ...
## \$ Dosage...29	: chr [1:296] "10mg" NA NA NA ...
## \$ Immunotherapy agent (FIRST)	: chr [1:296] "Pembrolizumab" "Nivolumab" "Pembrolizumab" "Pembrolizumab" ...
## \$ Dosage...31	: chr [1:296] "200mg" "200mg & 160mg" "100mg" "unknown then re" ...
## \$ Date of 1st dose...32	: chr [1:296] "43801" "43249" "43774" "43055" ...
## \$ No. of doses...33	: num [1:296] 25 18 4 18 9 37 15 2 5 15 ...
## \$ No. of deferrals...34	: num [1:296] 1 0 0 0 0 1 0 1 2 1 ...
## \$ Reason of deferral...35	: chr [1:296] "irAEs - resp - Autoimmune pneumonitis" NA NA NA ...
## \$ Reason of stopping...36	: chr [1:296] "irAEs - resp - Autoimmune pneumonitis" "PD" "PD" ...
## \$ Concurrent Ipilimumab...37	: chr [1:296] "N" "N" "N" "N" ...
## \$ Concurrent Chemo...38	: chr [1:296] "N" "N" "N" "N" ...
## \$ Concurrent TKI...39	: chr [1:296] "N" "N" "N" "N" ...
## \$ Immunotherapy agent (SECOND)	: chr [1:296] NA NA NA NA ...
## \$ Dosage...41	: chr [1:296] NA NA NA NA ...
## \$ Date of 1st dose...42	: POSIXct[1:296], format: NA NA ...
## \$ No. of doses...43	: num [1:296] NA NA NA NA NA NA NA NA NA NA ...
## \$ No. of deferrals...44	: num [1:296] NA NA NA NA NA NA NA NA NA NA ...
## \$ Reason of deferral...45	: chr [1:296] NA NA NA NA ...
## \$ Reason of stopping...46	: chr [1:296] NA NA NA NA ...
## \$ Concurrent Ipilimumab...47	: chr [1:296] NA NA NA NA ...
## \$ Concurrent Chemo...48	: chr [1:296] NA NA NA NA ...
## \$ Concurrent TKI...49	: chr [1:296] NA NA NA NA ...
## \$ Dead	: chr [1:296] "N" "Y" "N" "N" ...
## \$ Date of death/last FU	: chr [1:296] "44271" "44236" "44040" "44061" ...
## \$ Days for 1st onset of any AEs	: num [1:296] 25 NA 22 77 14 84 22 24 NA 74 ...
## \$ Inclusion/Exclusion	: chr [1:296] "Y" "Y" "Y" "Y" ...
## \$ Additional Information	: chr [1:296] "G2 Pneumonitis (207 days)" "TSH rise but later" ...
## \$...55	: chr [1:296] "Borderline TSH,FT4 fluctuation" NA NA NA ...
## \$...56	: chr [1:296] NA NA NA NA ...
## \$...57	: chr [1:296] NA NA NA NA ...