시각적

2023-08-29

파일 불러오기

```
setwd('C:\\Users\\phl02\\Desktop\\P\\bio_sas')
time<- read.csv("data\\tcm.csv")
time
```

```
##           study year event.e   n1 event.c   n2
## 1 study1 (1975) 1975      50  650      68  578
## 2 study2 (1977) 1977      85  901      56  403
## 3 study3 (1980) 1980      43  789      53  737
## 4 study4 (1982) 1982     101  834     127  832
## 5 study5 (1984) 1984      32  317      37  307
## 6 study6 (1991) 1991    1570 8347    1720 8600
## 7 study7 (1995) 1995     247 2227     235 2266
```

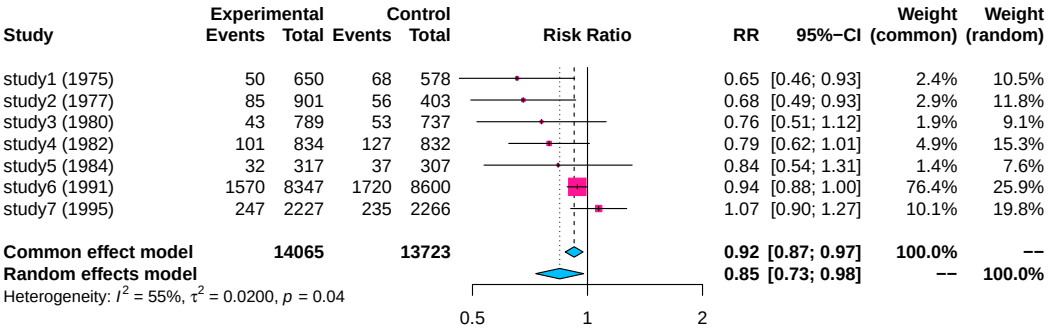
분석 진행

```
library(meta)
meta_time <- metabin(event.e,n1,event.c,n2,data=time,studlab = study,
                     sm='RR',method='Inverse')
meta_time
```

```
## Number of studies: k = 7
## Number of observations: o = 27788
## Number of events: e = 4424
##
##                           RR           95%-CI     z p-value
## Common effect model  0.9226 [0.8744; 0.9735] -2.94  0.0033
## Random effects model 0.8460 [0.7323; 0.9774] -2.27  0.0232
##
## Quantifying heterogeneity:
##  tau^2 = 0.0200 [0.0000; 0.1313]; tau = 0.1414 [0.0000; 0.3624]
##  I^2 = 55.0% [0.0%; 80.7%]; H = 1.49 [1.00; 2.28]
##
## Test of heterogeneity:
##      Q d.f. p-value
##  13.34    6  0.0379
##
## Details on meta-analytical method:
## - Inverse variance method
## - Restricted maximum-likelihood estimator for tau^2
## - Q-Profile method for confidence interval of tau^2 and tau
```

그래프

```
forest(meta_time,
       col.diamond = 'deepskyblue1',col.square = 'deeppink1')
```



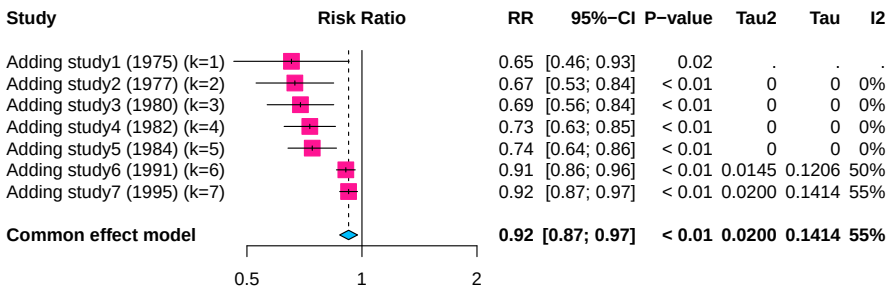
누적

```
meta_time2 <-metacum(meta_time,sortvar=year)
meta_time2
```

```
## Cumulative meta-analysis (common effect model)
##
##                                  RR           95%-CI  p-value   tau^2     tau
## Adding study1 (1975) (k=1)   0.6538 [0.4619; 0.9255]   0.0166
## Adding study2 (1977) (k=2)   0.6674 [0.5282; 0.8433]   0.0007  0.0000  0.0000
## Adding study3 (1980) (k=3)   0.6903 [0.5649; 0.8436]   0.0003  0.0000  0.0000
## Adding study4 (1982) (k=4)   0.7303 [0.6257; 0.8525] < 0.0001  0.0000  0.0000
## Adding study5 (1984) (k=5)   0.7411 [0.6404; 0.8578] < 0.0001  0.0000  0.0000
## Adding study6 (1991) (k=6)   0.9074 [0.8575; 0.9603]   0.0008  0.0145  0.1206
## Adding study7 (1995) (k=7)   0.9226 [0.8744; 0.9735]   0.0033  0.0200  0.1414
##
## Pooled estimate              0.9226 [0.8744; 0.9735]   0.0033  0.0200  0.1414
##                                  I^2
## Adding study1 (1975) (k=1)
## Adding study2 (1977) (k=2)     0.0%
## Adding study3 (1980) (k=3)     0.0%
## Adding study4 (1982) (k=4)     0.0%
## Adding study5 (1984) (k=5)     0.0%
## Adding study6 (1991) (k=6)    50.4%
## Adding study7 (1995) (k=7)    55.0%
##
## Pooled estimate               55.0%
##
## Details on meta-analytical method:
## - Inverse variance method
## - Restricted maximum-likelihood estimator for tau^2
```

그래프

```
forest(meta_time2,
       col.diamond = 'deepskyblue1',col.square = 'deeppink1')
```



결과 정리

```
library(kableExtra)
library(stringr)
result <- matrix(0,7,6)
colnames(result) <- c('year','RR','95% CI_low',
                      '95% CI_up','I^2(%)','P')
result[,1] <- as.matrix(unlist(str_extract_all(meta_time$studlab,"[0-9]{4,}")))
result[,2] <- c(0.65,0.67,0.69,0.73,0.74,0.91,0.92)
result[,3] <- c(0.46,0.53,0.56,0.63,0.64,0.86,0.87)
result[,4] <- c(0.93,0.84,0.84,0.85,0.86,0.96,0.97)
result[,5] <- round(na.omit(meta_time2$I2)*100,2)
result[,6] <- round(na.omit(meta_time2$pval),3)[1:7]

for(i in 1:nrow(result)){
  if (result[i,6] < 0.001) result[i,6]='<.001'
}

kable(result)
```

year	RR	95% CI_low	95% CI_up	I^2(%)	P
1975	0.65	0.46	0.93	0	0.017
1977	0.67	0.53	0.84	0	0.001
1980	0.69	0.56	0.84	0	<.001
1982	0.73	0.63	0.85	0	<.001
1984	0.74	0.64	0.86	50.35	<.001
1991	0.91	0.86	0.96	55.04	0.001
1995	0.92	0.87	0.97	55.04	0.003