```
### AB approach

model{
        for(i in 1:nN) {
                p[i]<-phi(mu[t[i]]+ vi[s[i], t[i]])
                y[i]~dbin(p[i], n[i])
        }
        for(j in 1:nS){
                vi[j, 1:nT]~dmnorm(mn[1:nT], T[1:nT,1:nT])
        }

        T[1:nT, 1:nT]<-inverse(invT[ , ])
        for(j in 1:nT){
            for(k in 1:nT){
                invT[j, k]<-sigma2*pow(rho,step(abs(j-k)-0.5))
            }
        }

        sigma2<-sigma*sigma
         sigma~dunif(0,5)
        for (j in 1:nT){
                mu[j]~dnorm(0, 0.001)
                probt[j]<-phi(mu[j]/sqrt(1+invT[j, j]))
        }
       rho~dunif(0.01,1)

        for (j in 1:nT){
            OR[j,j]<-1
                for (k in (j+1):nT){
                        OR[k, j] <- probt[k]/(1-probt[k])/probt[j]*(1-probt[j])
                         OR[j, k] <- 1/OR[k, j]
                }
        }

         rk<- rank(probt)   # the smaller the better
         for (k in 1:nT) {
                best[k]<-equals(rk[k],1)
        }

#       rk<- nT + 1 - rank(probt)   # the largest the better
#       for (k in 1:nT) {
#               best[k]<-equals(rk[k],1)
#       }
}
```

```
### CB Approach

model{
        for(i in 1:NS){
                 w[i,1] <-0
                delta[i,t[i,1]]<-0
                mu[i] ~ dnorm(0,0.1)

                for(k in 1:na[i]){
                        r[i,k] ~ dbin(p[i,t[i,k]],n[i,k])
                         logit(p[i,t[i,k]])<-mu[i] + delta[i,t[i,k]]
                 }

                 for(k in 2:na[i]){
                         delta[i,t[i,k]] ~ dnorm(md[i,t[i,k]],taud[i,t[i,k]])
                         md[i,t[i,k]] <-  d[t[i,k]] - d[t[i,1]]  + sw[i,k]
                         taud[i,t[i,k]] <- tau *2*(k-1)/k
                         w[i,k] <- (delta[i,t[i,k]]  - d[t[i,k]] + d[t[i,1]])
                         sw[i,k] <-sum(w[i,1:k-1])/(k-1)
                  }
        }

        d[1]<-0
         for (k in 2:NT){d[k] ~ dnorm(0,.0001) }

        sd~dunif(0,2)
        tau<-1/pow(sd,2)

# pairwise ORs

        for(j in 1:NT){
                 OR[j,j]<-1
                 for (k in (j+1):NT){
                         lor[k,j] <- d[k] - d[j]
                         log(OR[k,j]) <- lor[k,j]
                         OR[j, k] <- 1/OR[k, j]
                  }
          }
}
```

```
### Inconsistency

model{

# likelihood

  for (i in 1:nN) {
    p[i]<-phi(mu[t[i], group[i]] + v[s[i], group[i], t[i]])
    y[i]~dbin (p[i] , n[i])
  }


# random effects

  for (j in 1:nS){
    for(g in 1:n.group) {
      v[j,g,1:nT]~dmnorm(mn[1:nT], T[1:nT, 1:nT])
    }
  }

  T[1:nT, 1:nT]<-inverse(invT[ , ])
  for(j in 1:nT){
    for(k in 1:nT){
      invT[j, k]<-sigma2*pow(rho,step(abs(j-k)-0.5))
    }
  }
  sigma2<-sigma*sigma

# priors

  sigma~dunif(0,5)
  rho~dunif(0.01,1)

  for(k in 1:nT) {
    for(g in 1:n.group) {
      mu[k, g] ~ dnorm(0, 0.001)
    }
  }

# Compute inconsistency between treatments 5 and 1
  dis<-(mu[5,1]-mu[1,1])-(mu[5,3]-mu[1,2])

}
```