

The comparison of different bearing surfaces in THA survivorship

Supplementary 1. The complete search terms used in this study.

N = 467 (hip arthroplast* OR hip replace* OR hip prosth*) AND (metal OR chromium* OR cobalt* OR ceramic* OR alumina* OR aluminum oxide* OR polyethylene* OR highly crosslinked*) AND random* NOT(animal* NOT human*).

Supplementary 2. The random effects model used in WinBUGS software for statistical analysis of network meta-analysis in this study.

```
# ns=number of studies
# r=number of events
# n=sample size
# t=treatment
# nt=number of treatments
# na=number of arms
# ref=reference treatment
model {
  for(i in 1:ns) {
    w[i,1]<- 0
    theta[i,t[i,1]]<- 0
##binomial likelihood
    for (k in 1:na[i]) {r[i,t[i,k]] ~ dbin(p[i,t[i,k]],n[i,t[i,k]])}
##parameterization
    logit(p[i,t[i,1]])<- u[i]
    for (k in 2:na[i]) {
      logit(p[i,t[i,k]])<- u[i] + theta[i,t[i,k]]
      theta[i,t[i,k]] ~ dnorm(md[i,t[i,k]],prec[i,t[i,k]])
      md[i,t[i,k]]<- d[t[i,k]] - d[t[i,1]] + sw[i,k]
      w[i,k]<- theta[i,t[i,k]] - d[t[i,k]] + d[t[i,1]]
      sw[i,k]<- sum(w[i,1:k-1])/(k-1)
      prec[i,t[i,k]]<- prec *2*(k-1)/k }
##priors
    for (i in 1:ns) {u[i] ~ dnorm(0,.0001)}
    tau ~ dnorm(0,1)!(0,)
    prec<- 1/pow(tau,2)
    d[ref] <- 0
    for(k in 1:(ref-1)) {d[k] ~ dnorm(0,.0001)}
    for(k in (ref+1):nt) {d[k] ~ dnorm(0,.0001)}
##estimates
    for(i in 1:(nt-1)) {
      for (j in (i+1):nt) {
        OR[j,i]<- exp(d[j] - d[i])
        LOR[j,i]<- d[j] - d[i] }}
##ranking
    for(k in 1:nt) {
      order[k]<- rank(d[,k]) # this is when the outcome is negative
      # change to 'order[k]<- nt+1-rank(d[,k])' if the outcome is positive
      most.effective[k]<-equals(order[k],1)
      for(j in 1:nt) {
        effectiveness[k,j]<- equals(order[k],j)
        cumeffectiveness[k,j]<- sum(effectiveness[k,1:j]) }}
    for(k in 1:nt) { SUCRA[k]<- sum(cumeffectiveness[k,1:(nt-1)])/(nt-1)}
##model fit
    for(i in 1:ns) {
      for (k in 1:na[i]) {
        Darm[i,k]<- -2*( r[i,t[i,k]] *log(n[i,t[i,k]]* p[i,t[i,k]]/ r[i,t[i,k]])+(n[i,t[i,k]] - r[i,t[i,k]])*log((n[i,t[i,k]]-n[i,t[i,k]])*
p[i,t[i,k]])/(n[i,t[i,k]]- r[i,t[i,k]]))) }
        D[i]<- sum(Darm[i,1:na[i]]) }
      D.bar<- sum(D[])
    }
  }
# 1=MoPc, 2=MoPxl, 3=CoPc, 4=CoPxl, 5=CoC, 6=MoM
list(ns = 40 ,nt= 6, ref= 6,
```

