**SUPPLEMENTARY MATERIAL**

**Supplementary data. The R code of the ANOVA model**

model="

data{

 int N;

 int Ns;

 int Nt;

 int TP[N];

 int Dis[N];

 int TN[N];

 int NDis[N];

 int Study[N];

 int Test[N];

}

transformed data{

 vector[2] zero;

 zero[1] <- 0;

 zero[2] <- 0;

}

parameters{

 matrix[2,Nt] logitmu;

 matrix[2,Nt] Multi;

 matrix[Ns,2] nu;

 matrix[Ns,2] delta[Nt];

 vector<lower=0> [2] sigmaw;

 vector<lower=0> [2] sigmab;

 real etarho;

}

transformed parameters{

 matrix[2,Nt] MU;

 matrix[2,Nt] RR;

 matrix[2,Nt] OR;

 vector[Nt] DOR;

 vector[Nt] S;

 matrix[Nt,Nt] A;

 matrix[Nt,Nt] B;

 matrix[Nt,Nt] C;

 matrix[Ns,2]p\_i[Nt];

 vector<lower=0>[2] sigmawsq;

 vector<lower=0>[2] sigmabsq;

 vector<lower=0>[2] sigmasq;

 real rho;

 vector[2] rhow;

 matrix[2, 2] Sigma;

 for (i in 1:Ns){

 for (j in 1:2){

 for (k in 1:Nt)

 p\_i[k][i,j] <- inv\_logit(logitmu[j,k] + nu[i,j] + delta[k][i,j]);

 }}

 for (j in 1:2){

 for (k in 1:Nt){

 MU[j,k] <- mean(col(p\_i[k],j));

 }}

 for (j in 1:2){

 for (k in 1:Nt){

 RR[j,k] <- MU[j,k]/MU[j,Nt];

 OR[j,k] <- (MU[j,k]/(1 - MU[j,k]))/(MU[j,1]/(1 - MU[j,1]));

 }}

 for (l in 1:Nt){

 DOR[l] <- (MU[1,l]\*MU[2,l])/((1 - MU[1,l])\*(1 - MU[2,l]));

 for(m in 1:Nt){

 A[l,m] <- if\_else((MU[1,l] > MU[1,m]) && (MU[2,l] > MU[2,m]),1,0);

 B[l,m] <- if\_else((MU[1,l] < MU[1,m]) && (MU[2,l] < MU[2,m]),1,0);

 C[l,m] <- if\_else((MU[1,l] == MU[1,m]) && (MU[2,l] == MU[2,m]),1,0);

 }

 S[l] <- (2\*sum(row(A,l)) + sum(row(C,l)))/(2\*sum(row(B,l)) + sum(row(C,l)));

 }

 rho <- tanh(etarho);

 sigmawsq <- (sigmaw).\*(sigmaw);

 sigmabsq <- (sigmab).\*(sigmab);

 for (j in 1:2){

 sigmasq[j] <- (sigmabsq[j] + sigmawsq[j]);

 rhow[j] <- sigmabsq[j]/(sigmasq[j]);

 }

 Sigma[1, 1] <- sigmabsq[1];

 Sigma[2, 2] <- sigmabsq[2];

 Sigma[1, 2] <- rho\*sigmab[1]\*sigmab[2];

 Sigma[2, 1] <- rho\*sigmab[1]\*sigmab[2];

}

model{

 //Priors

 for (i in 1:Ns){

 nu[i] ~ multi\_normal(zero,Sigma);

 }

 for (j in 1:2){

 logitmu[j] ~ normal(0, 5);

 Multi[j] ~ normal(0, 5);

 }

 sigmaw ~ uniform(0, 5);

 sigmab ~ uniform(0, 5);

 etarho ~ normal(0, 5);

 for (i in 1:Ns){

 for (j in 1:2){

 for (k in 1:Nt)

 delta[k][i,j] ~ normal(0,sigmaw[j]);

 }

 }

 for (n in 1:N){

 TP[n] ~ binomial(Dis[n], p\_i[Test[n]][Study[n],1]);

 TN[n] ~ binomial(NDis[n], p\_i[Test[n]][Study[n],2]);

 }

}

generated quantities{

 vector[2\*N] loglik;

 for (n in 1:N)

 loglik[n] <- binomial\_log(TN[n], NDis[n],p\_i[Test[n]][Study[n],1]);

 for (n in (N+1):(2\*N))

 loglik[n] <- binomial\_log(TN[n-N], NDis[n-N],p\_i[Test[n-N]][Study[n-N],2]);

}"

N <- nrow(data)

Ns <- max(data$Study)

Nt <- max(data$Test)

datalist <- list(

 N = N,

 Ns = Ns,

 Nt = Nt,

 TP = data$TP,

 Dis = data$Dis,

 TN = data$TN,

 NDis = data$NDis,

 Test = data$Test,

 Study = data$Study)

results <- stan(model\_code = model, data=datalist,

 chains = 2, iter = 10000, warmup = 5000, thin = 1,

 control = list(adapt\_delta = 0.99, max\_treedepth = 15))

stan\_diag(results)

dev.new()

traceplot(results, pars = "MU")

SENSSPEC <- summary(results, pars = "MU")

write.csv(SENSSPEC, file = "SENSSPEC1.csv")

traceplot(results, pars = "DOR")

DOR <- summary(results, pars = "DOR")

write.csv(DOR, file = "DOR1.csv")

traceplot(results, pars = "S")

Superiority <- summary(results, pars = "S")

write.csv(Superiority, file = "SS1.csv")

traceplot(results, pars = "RR")

RR <- summary(results, pars = "RR")

write.csv(RR, file = "RR1.csv")

**Supplementary Table 1. Search strategy**

|  |
| --- |
|  |
| **Searching on Pubmed (Date Run: 03/04/2022)** |
| **Search number** | **Query** | **Results** |
| #1 | pancreatic cyst [MeSH Terms] | 7,845 |
| #2 | "cyst pancreas"[Title/Abstract] OR "cystic pancreatic lesions "[Title/Abstract] OR "intraductal papillary mucinous neoplasm "[Title/Abstract] OR "mucinous cystic neoplasm"[Title/Abstract] OR "pancreatic cystic lesions"[Title/Abstract] OR "pancreatic cystic tumor"[Title/Abstract] OR "Pancreatic Intraductal Neoplasms"[Title/Abstract]  | 3,056 |
| #3 | "endoscopic ultrasound"[Title/Abstract] OR "diagnostic imaging"[Title/Abstract] OR "endoscopic ultrasound guided fine needle aspiration"[Title/Abstract] OR "EUS FNA"[Title/Abstract] OR "cyst fluid analysis"[Title/Abstract] OR "chemical analysis"[Title/Abstract] OR "tumor biomarker"[Title/Abstract] OR "tumor marker"[Title/Abstract] OR "carcinoembryonic antigen"[Title/Abstract] OR "CEA"[Title/Abstract] OR "glucose"[Title/Abstract] OR "intracystic glucose"[Title/Abstract] OR "pancreatic cyst fluid glucose"[Title/Abstract] OR "cytology"[Title/Abstract] OR "cytopathologic assessment"[Title/Abstract] OR "molecular marker"[Title/Abstract] OR "next generation sequencing"[Title/Abstract] OR "KRAS"[Title/Abstract] OR "GNAS"[Title/Abstract] OR "DNA mutation "[Title/Abstract] OR "Endoscopic ultrasound guided through the needle micro forceps"[Title/Abstract] OR "EUS TTNB"[Title/Abstract] OR "microforceps"[Title/Abstract] OR "microforceps biopsy"[Title/Abstract] OR "EUS MFB"[Title/Abstract] OR "forceps biopsy"[Title/Abstract] OR "fine needle biopsy"[Title/Abstract] OR "EUS FNB"[Title/Abstract] OR "micro forcep"[Title/Abstract] OR "moray micro forceps"[Title/Abstract] OR "through the needle"[Title/Abstract] OR "endomicroscopy"[Title/Abstract] OR "EUS guided needle based confocal laser endomicroscopy"[Title/Abstract] OR "EUS nCLE"[Title/Abstract] OR "contrast enhanced EUS"[Title/Abstract] OR "contrast enhanced harmonic EUS"[Title/Abstract] OR "CE EUS"[Title/Abstract] OR "CH EUS"[Title/Abstract] OR "CEH EUS"[Title/Abstract] | 749,055  |
| #4 | (#1 OR #2) AND #3 | 1,564 |
| **Searching on Embase (Date Run: 03/04/2022)** |
| **No.** | **Query** | **Results** |
| #1 | 'pancreatic cyst':ti,ab,kw OR 'cyst pancreas':ti,ab,kw OR 'cystic pancreatic lesions':ti,ab,kw OR 'intraductal papillary mucinous neoplasm':ti,ab,kw OR 'mucinous cystic neoplasm':ti,ab,kw OR 'pancreatic cystic lesions':ti,ab,kw OR 'pancreatic cystic tumor':ti,ab,kw OR 'pancreatic intraductal neoplasms':ti,ab,kw  | 6,860 |
| #2 | 'pancreas cyst'/exp | 13,608 |
| #3 | 'endoscopic ultrasound':ti,ab,kw OR 'diagnostic imaging':ti,ab,kw OR 'endoscopic ultrasound guided fine needle aspiration':ti,ab,kw OR 'eus fna':ti,ab,kw OR 'cyst fluid analysis':ti,ab,kw OR 'chemical analysis':ti,ab,kw OR 'tumor biomarker':ti,ab,kw OR 'tumor marker':ti,ab,kw OR 'carcinoembryonic antigen':ti,ab,kw OR 'cea':ti,ab,kw OR 'glucose':ti,ab,kw OR 'intracystic glucose':ti,ab,kw OR 'pancreatic cyst fluid glucose':ti,ab,kw OR 'amylase':ti,ab,kw OR 'cytology':ti,ab,kw OR 'cytopathologic assessment':ti,ab,kw OR 'molecular marker':ti,ab,kw OR 'next generation sequencing':ti,ab,kw OR 'kras':ti,ab,kw OR 'gnas':ti,ab,kw OR 'dna mutation':ti,ab,kw OR 'endoscopic ultrasound guided through the needle microforceps':ti,ab,kw OR 'eus ttnb':ti,ab,kw OR 'microforceps':ti,ab,kw OR 'microforceps biopsy':ti,ab,kw OR 'eus mfb':ti,ab,kw OR 'forceps biopsy':ti,ab,kw OR 'fine needle biopsy':ti,ab,kw OR 'eus fnb':ti,ab,kw OR 'micro forcep':ti,ab,kw OR 'moray micro forceps':ti,ab,kw OR 'through the needle':ti,ab,kw OR 'endomicroscopy':ti,ab,kw OR 'eus guided needle based confocal laser endomicroscopy':ti,ab,kw OR 'eus ncle':ti,ab,kw OR 'contrast enhanced eus':ti,ab,kw OR 'contrast enhanced harmonic eus':ti,ab,kw OR 'ce eus':ti,ab,kw OR 'ch eus':ti,ab,kw OR 'ceh eus':ti,ab,kw  | 1,068,642 |
| #4 | (#1 OR #2) AND #3 | 4,045 |
| #5 | #4 AND 'Article'/it | 1,695 |
| **Searching on Cochrane (Date Run: 03/04/2022)** |
| **ID**  | **Search** | **Hits** |
| #1 | ('pancreas cyst' OR 'cyst pancreas' OR 'cystic pancreatic lesions ' OR 'intraductal papillary mucinous neoplasm ' OR 'mucinous cystic neoplasm' OR 'pancreatic cystic lesions' OR 'pancreatic cystic tumor' OR 'Pancreatic Intraductal Neoplasms''):ti,ab,kw  | 198 |
| #2 | MeSH descriptor: [Pancreatic Cyst] explode all trees | 48 |
| #3 |  'endoscopic ultrasound' OR 'diagnostic imaging' OR 'endoscopic ultrasound guided fine needle aspiration' OR 'EUS FNA' OR 'cyst fluid analysis' OR 'chemical analysis' OR 'tumor biomarker' OR 'tumor marker' OR 'carcinoembryonic antigen' OR 'CEA' OR 'glucose' OR 'intracystic glucose' OR 'pancreatic cyst fluid glucose' OR 'amylase' OR 'cytology' OR 'cytopathologic assessment' OR 'molecular marker' OR 'next generation sequencing' OR 'KRAS' OR 'GNAS' OR 'DNA mutation' OR 'Endoscopic ultrasound guided through the needle microforceps' OR 'EUS TTNB' OR 'microforceps' OR 'microforceps biopsy' OR 'EUS MFB' OR 'forceps biopsy' OR 'fine needle biopsy' OR 'EUS FNB' OR 'micro forcep' OR 'moray micro forceps' OR 'through the needle' OR 'endomicroscopy' OR 'EUS guided needle based confocal laser endomicroscopy' OR 'EUS nCLE' OR 'contrast enhanced EUS' OR 'contrast enhanced harmonic EUS' OR 'CE EUS' OR 'CH EUS' OR 'CEH EUS'  | 142,090 |
| #4 | (#1 OR #2) AND #3 | 124 |

**Supplementary Table 2. Information on cyst size of each index technique**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Index Techniques** | **Number of all studies (n)** | **Number of studies with available data on cyst size (n)** | **Number of studies with the inclusion criterion of cyst size no less than 20mm (n)** | **Mean cyst size (mm)** |
| FB-EUS | 6 | 4 | 1 | 36.1 |
| Cytology | 21 | 16 | 3 | 33.8 |
| CEA | 28 | 19 | 8 | 30.7 |
| Glucose | 6 | 3 | 2 | 38.0 |
| KRAS | 16 | 15 | 1 | 27.7 |
| GNAS | 10 | 11 | 1 | 32.6 |
| KRAS+GNAS | 5 | 4 | 1 | 33.4 |
| EUS-nCLE | 9 | 8 | 5 | 36.0 |
| EUS-TTNB | 7 | 6 | 1 | 35.5 |
| CH-EUS | 1 | 1 | 0 | 33.0 |

**Supplementary Table 3. Conclusion of the between-study heterogeneity in network meta-analyses**

|  |  |  |  |
| --- | --- | --- | --- |
| **Comparisons** | **No. of included studies** | **Pooled I2 (pair-wise)** | **Pooled I2 (network)** |
| **FB-EUS** |
| vs. Cytology | 4 | 57.6% | 73.0% |
| vs. CEA | 4 | 22.5% | 25.2% |
| vs. KRAS | 1 | NA | 0.0% |
| vs. GNAS | 1 | NA | 0.0% |
| vs. KARS+GNAS | 1 | NA | 0.0% |
| vs. EUS-nCLE | 1 | NA | 0.0% |
| vs. CH-EUS | 1 | NA | 0.0% |
| **Cytology** |
| vs. CEA | 11 | 0.0% | 0.0% |
| vs. KRAS | 7 | 52.2% | 51.8% |
| vs. GNAS | 4 | 0.0% | 0.0% |
| vs. KARS+GNAS | 3 | 69.5% | 68.8% |
| vs. EUS-nCLE | 2 | 0.0% | 35.0% |
| vs. EUS-TTNB | 5 | 46.2% | 33.5% |
| **CEA** |
| vs. Glucose | 6 | 0.0% | 0.0% |
| vs. KRAS | 10 | 59.4% | 58.7% |
| vs. GNAS | 6 | 3.6% | 0.0% |
| vs. KARS+GNAS | 4 | 60.5% | 48.4% |
| vs. EUS-nCLE | 5 | 0.0% | 35.1% |
| vs. EUS-TTNB | 5 | 44.3% | 21.4% |
| **KRAS** |
| vs. GNAS | 10 | 0.0% | 0.0% |
| vs. KARS+GNAS | 7 | 0.0% | 26.0% |
| vs. EUS-nCLE | 1 | NA | 0.0% |
| **GNAS** |
| vs. KARS+GNAS | 7 | 0.0% | 0.0% |
| vs. EUS-nCLE | 1 | NA | 0.0% |
| **KRAS+GNAS** |
| vs. EUS-nCLE | 1 | NA | 0.0% |
| **EUS-nCLE** |
| vs. EUS-TTNB | 1 | NA | 0.0% |

**Supplementary Table 4. Sensitivity analyses reporting the effects of cyst size to primary outcomes**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Diagnostic Techniques** | **Sensitivity** | **Specificity** | **Diagnostic Odds Ratio** | **Superiority Index** | **Relative Sensitivity** | **Relative Specificity** |
| **Including the studies where the the information of cyst size was available** |
| **Diagnostic Performance Judged by** **Pathological and Cytological Diagnosis** |
| **FB-EUS** | 0.70(0.58,0.85)  | 0.71(0.44,0.82)  | 6.61(1.81,15.40)  | 0.16(0.08,0.60)  | 1.00  | 1.00  |
| **Cytology** | 0.49(0.38,0.59)  | 0.88(0.78,0.95)  | 7.62(3.18,17.59)  | 0.13(0.08,0.43)  | 0.71(0.49,0.89)  | 1.27(1.07,1.97)  |
| **CEA** | 0.70(0.64,0.77)  | 0.75(0.65,0.86)  | 7.54(4.25,15.34)  | 0.20(0.09,0.60)  | 1.01(0.80,1.24)  | 1.09(0.92,1.71)  |
| **Glucose** | 0.88(0.78,0.97)  | 0.57(0.42,0.87)  | 18.17(4.72,86.80)  | 0.61(0.14,3.00)  | 1.28(1.00,1.56)  | 0.85(0.62,1.61)  |
| **KRAS** | 0.55(0.46,0.64)  | 0.93(0.84,0.98)  | 19.79(6.06,56.85)  | 0.54(0.11,1.67)  | 0.79(0.59,1.00)  | 1.35(1.12,2.09)  |
| **GNAS** | 0.43(0.29,0.53)  | 0.99(0.91,1.00)  | 28327.84(6.41,55424.28)  | 1.05(0.11,3.00)  | 0.62(0.39,0.78)  | 1.44(1.19,2.22)  |
| **KRAS+****GNAS** | 0.75(0.67,0.85)  | 0.94(0.83,1.00)  | 148.62(14.96,764.97)  | 2.71(0.60,11.00)  | 1.08(0.85,1.35)  | 1.37(1.14,2.13)  |
| **EUS-nCLE** | 0.97(0.88,0.99)  | 0.96(0.81,1.00)  | 13261.30(78.17,8236.79)  | 14.04(3.00,17.00)  | 1.40(1.10,1.64)  | 1.39(1.13,2.09)  |
| **EUS-TTNB** | 0.88(0.77,0.99)  | 0.95(0.76,1.00)  | 1488411.46(29.67,206721.96)  | 7.25(1.00,19.00)  | 1.27(1.00,1.59)  | 1.38(1.08,2.18)  |
| **CH-EUS** | 0.61(0.44,0.91)  | 0.94(0.70,0.99)  | 132.79(5.34,629.48)  | 1.78(0.11,11.00)  | 0.88(0.67,1.38)  | 1.36(1.09,1.99)  |
| **Diagnostic Performance Judged by Overall Diagnosis** |
| **FB-EUS** | 0.80(0.67,0.90) | 0.63(0.45,0.80) | 8.19(2.55,21.09) | 0.35(0.09,2.33) | 1.00  | 1.00  |
| **Cytology** | 0.50(0.41,0.58) | 0.91(0.86,0.94) | 10.25(5.13,17.67)  | 0.15(0.09,0.33) | 0.62(0.49,0.79) | 1.48(1.14,2.00) |
| **CEA** | 0.67(0.60,0.73) | 0.72(0.63,0.80) | 5.52(3.14,9.33)  | 0.13(0.09,0.33) | 0.84(0.72,1.03) | 1.18(0.89,1.60) |
| **Glucose** | 0.90(0.79,0.97) | 0.57(0.36,0.77) | 17.98(3.87,54.58)  | 1.32(0.14,5.00) | 1.14(0.94,1.39) | 0.93(0.56,1.39) |
| **KRAS** | 0.59(0.49,0.68) | 0.96(0.91,0.98) | 37.15(13.83,83.15) | 1.36(0.20,5.00) | 0.74(0.60,0.92) | 1.56(1.20,2.11) |
| **GNAS** | 0.42(0.31,0.54) | 0.99(0.95,1.00) | 19.94(14.00,35.17) | 1.22(0.20,3.00) | 0.53(0.37,0.71) | 1.62(1.25,2.19) |
| **KRAS+****GNAS** | 0.77(0.64,0.86) | 0.97(0.90,1.00) | 366.17(23.38,1788.17)  | 7.79(1.00,13.00)  | 0.97(0.78,1.19) | 1.58(1.21,2.15) |
| **EUS-nCLE** | 0.87(0.79,0.93) | 0.90(0.82,0.95) | 71.96(24.92,170.15)  | 6.93(1.00,13.00)  | 1.09(0.93,1.32) | 1.46(1.12,1.99) |
| **EUS-TTNB** | 0.86(0.76,0.93) | 0.82(0.72,0.91) | 35.38(12.40,85.15)  | 3.14(0.43,9.00)  | 1.08(0.91,1.32) | 1.35(1.00,1.86) |
| **CH-EUS** | 0.74(0.45,0.92) | 0.93(0.75,1.00) | 171.26(5.31,1066.66)  | 4.92(0.14,15.00)  | 0.93(0.56,1.25) | 1.51(1.18,1.99) |
| **Including the studies where the**  |
| **Diagnostic Performance Judged by Pathological and Cytological Diagnosis** |
| **FB-EUS** | 0.76(0.39,0.96)  | 0.52(0.15,0.91)  | 8.98(0.78,38.42)  | 0.87(0.08,5.00)  | 1.00  | 1.00  |
| **Cytology** | 0.44(0.17,0.73)  | 0.75(0.38,0.96)  | 4.03(1.01,15.46)  | 0.42(0.08,1.67)  | 0.68(0.39,1.12)  | 1.44(0.86,3.01)  |
| **CEA** | 0.68(0.44,0.84)  | 0.59(0.32,0.83)  | 3.68(1.69,8.63)  | 0.42(0.08,1.00)  | 0.84(0.64,1.29)  | 1.27(0.77,2.54)  |
| **Glucose** | 0.83(0.46,0.98)  | 0.48(0.13,0.88)  | 14.16(2.87,47.14)  | 1.01(0.14,4.33)  | 1.17(0.92,1.80)  | 0.93(0.47,2.14)  |
| **KRAS** | NA | NA | NA | NA | NA | NA |
| **GNAS** | NA | NA | NA | NA | NA | NA |
| **KRAS+****GNAS** | NA | NA | NA | NA | NA | NA |
| **EUS-nCLE** | 0.93(0.71,0.99)  | 0.86(0.52,0.99)  | 94.86(14.64,560.96)  | 6.67(1.00,15.00)  | 1.15(0.92,1.76)  | 1.59(1.00,3.50)  |
| **EUS-TTNB** | 0.96(0.69,1.00)  | 0.83(0.27,1.00)  | 22907118.24(20.52,3963883.41)  | 12.48(1.00,19.00)  | 1.25(1.03,1.96)  | 1.56(0.57,3.41)  |
| **CH-EUS** | NA | NA | NA | NA | NA | NA |
| **Diagnostic Performance Judged by Overall Diagnosis** |
| **FB-EUS** | 0.81(0.50,0.94)  | 0.54(0.25,0.87)  | 8.98(0.78,38.42)  | 0.87(0.08,5.00)  | 1.00  | 1.00  |
| **Cytology** | 0.53(0.31,0.70)  | 0.70(0.53,0.93)  | 4.03(1.01,15.46)  | 0.42(0.08,1.67)  | 0.68(0.39,1.12)  | 1.44(0.86,3.01) |
| **CEA** | 0.66(0.54,0.75)  | 0.62(0.47,0.83)  | 3.68(1.69,8.63)  | 0.42(0.08,1.00)  | 0.84(0.64,1.29)  | 1.27(0.77,2.54)  |
| **Glucose** | 0.92(0.76,0.97)  | 0.45(0.27,0.78)  | 14.16(2.87,47.14)  | 1.01(0.14,4.33) | 1.17(0.92,1.80)  | 0.93(0.47,2.14)  |
| **KRAS** | 0.63(0.32,0.91)  | 0.85(0.45,1.00)  | 1373735.30(0.86,6431.57)  | 3.20(0.09,11.00)  | 0.81(0.41,1.46)  | 1.75(0.77,3.42)  |
| **GNAS** | 0.68(0.19,0.96)  | 0.71(0.35,1.00)  | 38183.83(0.72,3888.84)  | 2.29(0.08,11.00)  | 0.85(0.24,1.28)  | 1.46(0.58,3.37)  |
| **KRAS+****GNAS** | 0.75(0.43,0.96)  | 0.73(0.33,1.00)  | 32106.59(1.17,10336.96)  | 3.05(0.09,15.00)  | 0.96(0.55,1.60)  | 1.49(0.60,3.41)  |
| **EUS-nCLE** | 0.90(0.79,0.95)  | 0.88(0.55,0.99)  | 2093439.97(0.00,11844.42)  | 6.67(1.00,15.00)  | 1.15(0.92,1.76)  | 1.60(1.00,3.50)  |
| **EUS-TTNB** | 0.98(0.89,1.00)  | 0.85(0.59,1.00)  | 22907118.24(20.52,3963883.41)  | 12.48(1.00,19.00)  | 1.25(1.03,1.96)  | 1.56(0.57,3.41)  |
| **CH-EUS** | NA | NA | NA | NA | NA | NA |

Data were presented in posterior medians with their 95% equal tailed credible intervals.

**FIGURE LEGENDS**

**Supplementary Figure 1.** **The between-study heterogeneity in network meta-analyses**

**Supplementary Figure 2. Pooled sensitivity and specificity of each index technique judged by pathological and cytological diagnosis in A) pooled sensitivity and specificity in network meta-analysis, B) sensitivity analyses by including the studies which provided the information of cyst size, C) sensitivity analyses by including the studies which set the criterion that PCLs were not less than 20mm.**

**Supplementary Figure 3. Pooled sensitivity and specificity of each index technique judged by overall diagnosis in A) pooled sensitivity and specificity in network meta-analysis, B) sensitivity analyses by including the studies which provided the information of cyst size, C) sensitivity analyses by including the studies which set the criterion that PCLs were not less than 20mm.**

**Supplementary Figure 4. Overall technical success rates and adverse event rates of EUS-nCLE and EUS-TTNB**