

shalviri_g@yahoo.com

// : // :

Bayesian Confidence Propagation Neural Network (BCPNN) :

Proportional Reporting Ratio (PRR) Reporting Odds Ratio(ROR)

$\geq \geq , \geq$

BCPNN

PRR

ROR

BCPNN

.()

[Uppsala Monitoring Center

(UMC)]

.()

WHO

Bayesian

Bayesian Confidence) BCPNN .()

(Propagation Neural Network

.()

Medicines)

.()

(Control Agency or MCA

(PRRs)

Proportional Reporting Ratios

Evans . .()

ADR

.()

PRR

(%) 487

(%)

Proportional (PRRs) ,

(%)

Bayesian data mining Reporting Ratios

(%)

(%)

Prescription) PEM

(Event Monitoring

FDA

Empirical) EBS Data mining
() (Bayesian Screening

Proportional

Reporting Odds Ratios ,Reporting Ratios

Neural Network Bayesian

()

Slone Epidemiology Unit or) Slone
(SEU

(.)

Excel

odds ratios

)

((crude)

WHO Adverse Drug Reaction)
() (Terminology

Reporting Odds (ROR) (Preferred Term)

Ratio

ROR ()

%

ROR

ROR

%

Access

Query

:

b

a

d

c

()

:

Bayesian Confidence

Propagation Neural Network (BCPNN)

Proportional Reporting Ratio (PRR)

Reporting Odds Ratio (ROR)

Bayesian Confidence Propagation Neural Network (BCPNN)

Information) IC ()

(Component

()

%

IC

PRR

IC-2SD

chi – squared

IC-2SD

IC-2SD > 0

PRR

PRR ≥

(

Chi-squared

PRR % (

.()

PRR
≥ ≥ , ≥

cut-off

PRR ≥ 2, $\chi^2 \geq 4$:

≥

≥ ≥

ROR

%

IC

IC-2SD

) PRR

(% /)

(

(/ %)

% /

) ROR

(% /)

(

cut-

(% /)

off

(% ,)

) IC

(% ,)

(

SNIP

.()

(Strength)

(% /)

(NEW)

)

(Clinical Importance) (

IVIG

(Potentially preventable)

(SNIP)

%

%

.()

% / % /

BCPNN , ROR , PRR

% /

IC-2SD

PRR
(proportional mortality ratios)
PRR
BCPNN PRRs
FDA EBS WHO
(
UK Medicines Control Agency MCA) PRR
(%)
chi- PRR
association squared
UK yellow card system
/ / PRR

PRRs
MCA
Important New Strong) SNIP EBS BCPNN PRRS
(Preventable

IVIG

BCPNN

WHO

BCPNN

WHO

BCPNN

()

PRRs

BCPNN EBS

NSAIDs

(RORs PRRs)

BCPNN IC

()

| | | | |
|-----|-----|--------------------------------|--------|
| % , | % , | PRR ≥ 2 , $\chi^2 \geq 4$ | \geq |
| % , | % , | ROR, CI>1 | |
| % , | % , | PRR, CI>1 | |
| % , | % , | IC, IC-2SD>0 | |
| % , | % , | PRR ≥ 2 , $\chi^2 \geq 4$ | \geq |
| % , | % , | ROR, CI>1 | |
| % , | % , | PRR, CI>1 | |
| % , | % , | IC, IC-2SD>0 | |
| % , | % , | PRR ≥ 2 , $\chi^2 \geq 4$ | \geq |
| % , | % , | ROR, CI>1 | |
| % , | % , | PRR, CI>1 | |
| % , | % , | IC, IC-2SD>0 | |

References

- 1- World Health organization. The importance of pharmacovigilance, safety monitoring of medicinal products. WHO: Geneva, 2002.
- 2- Mann R.D, Andrews E.B, Pharmacovigilance. John Wiley & Sons Ltd. 2002.
- 3- Boxel J.V, Santoso B., Edwards I.R. Drug benefits and Risks, International textbook of clinical pharmacology. John Wiley & Sons Ltd. 2001.
- 4- Meyboom, R.H.B. Detecting Adverse Drug reactions, Pharmacovigilance in the Netherlands. The Netherlands pharmacovigilance Foundation LAREB.1998.
- 5- Meyboom, R.H.B., Egberts, A.C.G. Edwards, I.R. Principles of Signal Detection in Pharmacovigilance. Drug Safety 1997; 16 (6): 355-365.
- 6- Hauben, M. Zhout, X. Quantitative methods in pharmacovigilance, focus on signal detection. Drug Safety 2003; 26(3): 159-186.
- 7- Bate, A. Lindquist, M. Edwards, I.R. Orre, R. A data mining approach for signal detection and analysis. Drug Safety 2002; 25(6): 393-397.
- 8- Evans, S. J. W. Waller, P. C. Davis, S. Use of proportional reporting ratios (PRRs) for signal generation from spontaneous adverse drug reaction reports. *Pharmacoepidemiology and drug safety* 2001; 10: 483-486.
- 9- Szarfman, A. Machado, S.G. O'Neill, R.T. Use of screening algorithms and computer systems to efficiently signal higher-than-expected combinations of drugs and events in the US FDA's spontaneous reports database. *Drug Safety* 2002; 25(6): 381-392.
- 10- Gould, A.L. Practical pharmacovigilance analysis strategies. *Pharmacoepidemiology and drug safety* 2003; 12: 559-574.
- 11- WHO adverse reaction terminology. the Uppsala Monitoring Center, 2003.
- 12- WHO Collaborating Center for International Drug Monitoring, Viewpoint, watching for safer medicines. Part 2. the Uppsala Monitoring Center, 2004; 56.
- 13- Waller, P.C. Lee, E.H. Responding to drug safety issues. *Pharmacoepidemiology and drug safety*. 1999; 8: 535-552.
- 14- Puijtenbroek, E.P. Grootheest, K. Diemont, W.L. Leufkens, H.G. M. Egberts, A.C.G. Determinants of signal selection in a spontaneous reporting system for adverse drug reactions. *Br J Clin Pharmacol*, 2001, 52, 579-586.
- 15- Stahl, M. Lindquist, M. Edwards I. R. Brown, E.G. Introducing triage logic as a new strategy for the detection of signals in the WHO Drug Monitoring Database. *Pharmacoepidemiology and drug safety* 2004; 13: 355-363.
- 16- Puijtenbroek, E.P. Bate, A. Leufkens, HGM. Lindquist, M. Orre, R. Egberts, ACG. A comparison of measures of disproportionality for signal detection in spontaneous reporting systems for adverse drug reactions. *Pharmacoepidemiology and drug safety* 2002; 11: 3-10.

