Mining of ADR And Symptoms for Immediate Patient Treatment

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ABSTRACT

Adverse Drug Reaction is the most critical issue in the medical field. The importance of chemical drug reaction is severe and spreading easily. It causes severe major problem in hospitalization. Here it gives you a detailed view of ADR effects and it mines the data to get instantaneous treatment for the patients. Adverse drug reaction is an cause of harm which affects the patient by taking a medicine. When a person intake a capsule without prescribed by a doctor then it has a high probability of ADR in it. So, it is the important issue in the drug safety. Many ADR are found after post-marketing clinical trials so identifying ADR in pre-marketing trial is more important rather than post trials. Statistical data is the main key factor in mining concept to detect the ADR as early as possible in the drug safety.

Keywords : ADR, Classification, Clustering, Query Planning, Association Rule Mining

I. INTRODUCTION

Data mining is a process of analyzing the data from different views and summarizing into useful information. It also uses the past data and solve the problem. It is the extraction of knowledge from large database.

Classification, Clustering, Query Planning and Association rule mining are the fundamental and important methodologies in mining concept. Basically it works with the existing previous data and extract the cumulative amount of data for the present work.

Now a days mining plays a major appropriate role in every sector. For example in Sales and marketing when the customer makes out the online shopping they would have missed some products to purchase. In mining it extracts the related product from the database and provides the customer related products to them.

Getting the knowledge based approach for the pair and match with the existing data to give out the effect of ADR is an ultimate goal of this study. It integrates ADR warehouse and datamining technique together where it supports the discovery of drug and symptoms called drug association rule.

II. RELATED WORK

Many methods were implemented to find out the ADR effects and used many algorithm to extract the drug suggestion. In this paper we used a more efficient algorithm that gives you the immediate treatment before post marketing

Harpaz, R., Dumouchel, W., Shah, N. H., Madigan, D.,Ryan,P. and Friedman, C. Novel Data-Mining Methodologies for Adverse Drug Event Discover and Analysis. Clin Pharmacol Ther (May 2 2012) have implemented the concept of distinguished measures of association rules and mining concepts. Mining has the capacity to give n number of pattern matching where this author has found the way to distinguish

these factor. It has many protocols to be followed to get the main trivials.

Y.Ji, H. Ying, P. Dews, M.S. Farber, A. Mansour, J.Tran, R.E .Miller , and R.M. Massanari, "A Fuzzy Recognition-Primed Decision Model-Based Causal Association Mining Algorithm for Detecting Adverse Drug Reactions in Post marketing Surveillance," have implemented the relation between drug and symptom using fuzzy logic system. It is based on the fuzzy sets.It also uses the RPD model for the implementation. Instead of calculating the risk ratio we can use causal leverage for better way that can be found by using fuzzy logic system.

C. Marinica and F. Guillet, "Knowledge-Based Interactive Post mining of Association Rules Using Ontologies," (June 2010) have implemented the strategy of finding the ADR effect before trial is most important for the patients. They have used the causal leverage measure to determine the causal effect of ADR. It also uses the Multi gamma poisson shrinker algorithm to find out the frequent data item set from a itemset.

B.Ding,D. Lo.J.Han and S-C.Khoo," Efficient mining of closed repetitive gapped subsequence from a sequence database"(2009) was the one who found the sequence pattern mining by non overlapping technique. It has two algorithm for implementation. where it is actually a tedious algorithm to implement it. They completely overcomed by many issues and made it.

YouxiWu,YaoTong,Xingquan Zhu(2017) have found the new algorithm NOSEP which is a simple efficient computer based method to discover the frequent subsequent pattern in a unit sequence. By using the gap constraint user can find the special characteristic of the pattern such as finding DNA sequence. It is used to calculate the exact pattern in a sequence.

III. PROPOSED WORK OF ADR

Here in this proposed work, we have some modules which will be used to give out the output easily. These modules are used to buildup the final result.

3.1 PATIENT RECORD DETAILS:

In first module patient details will be stored in a database, which will have the records of the patient history. These records can be easily retrieved whenever required. These resource are utilized to find the patient history which includes their symptoms and drugs taken.
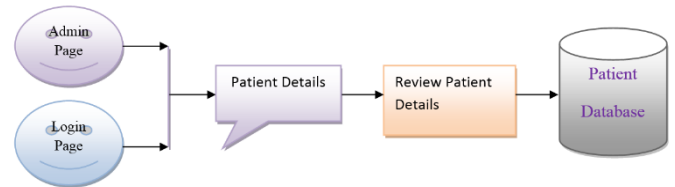
### 3.2Searching for ADR signal pairs:

Christopher C. Yang, Ling Jiang, Hao dong Yang, Xuning Tang." Detecting Signals of Adverse Drug Reactions from Health Consumer Contributed Content in Social Media"(2012) have implemented the theorized structure of ADR signal pair to generate the necessary data. Likewise we have developed a concept of signal pair to detect the match pair. In second module, searching for ADR signal pairs which will find out the perfect matching from patient database. It uses the new premium concept called exclusive causal leverage. This is the main step to get the potential ADR signal pair from patient database. These data are retrieved using SQL Query language. It also uses the unique PID for each patient. It uses the relational DBMS with two table named as Patient drug used and symptom of patient.
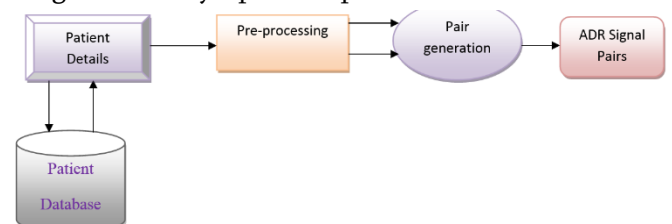
Pair generation will generate for finding the signal pair with the records. It also abstracts the symptoms of each drug taken by the patient. It is based upon the Multi Poisson Gamma Shrinker algorithm.
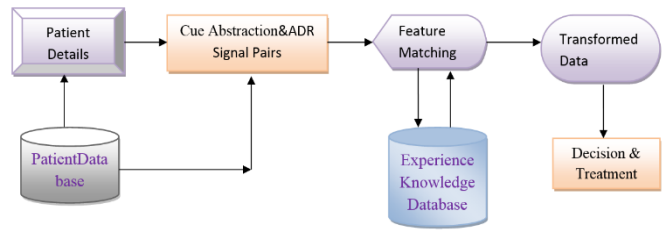
3.3 Searching for support count and drugs:

Then in next module it searches for the drug to be given for the patient with the help of the support count. Mining owns a capability to mine the data and to perform some rules to give back the result. User can specify their specific drugs in the drug of interest. However, the two tables were used to find out the signal pair for the symptom. It gives some values for drugs based on the support count. It has some scale of acceptance details like very likely, probable, unlikely.
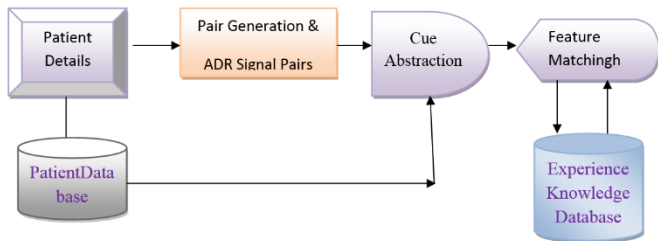
3.4 Transformed Data and Association Rules:

Refining Adverse Drug Reactions using Association Rule Mining for Electronic Healthcare Data Jenna M. Reps, Uwe Aickelin, Jiangang Ma, Yan chun Zhang(feb-2015) they have used the concept of association rule of mining to mine the data from healthcare database. They have used support and confidence to extract the frequently used data items. However, we also developed a association rule mining to get the result from the data. Transformed data is given to the user by using the association rule. It is used to verify the details like support count and signal pair available. Then the actual output is available in this part. Thus the patient can know the ADR effect within a limited duration of time to take a medicine effectively.

IV. RESULTS AND DISCUSSION

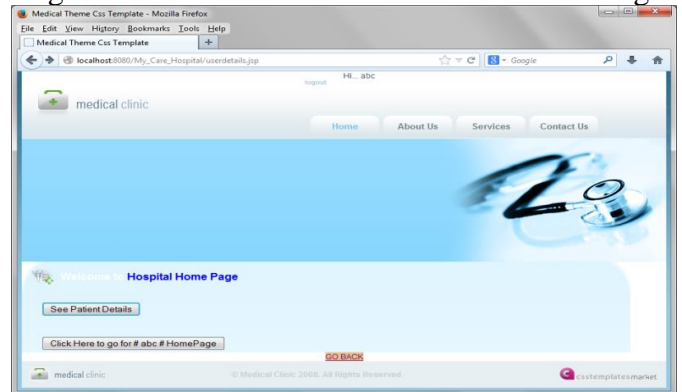

Figure: 4.1 User Or Admin Authentication Design
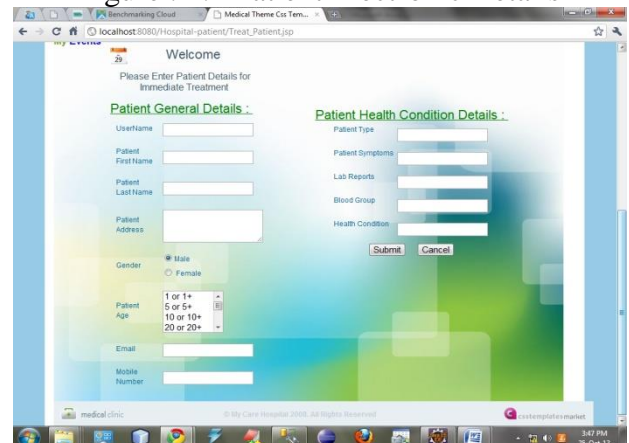

Figure : 4.2 Patient Electronic Details
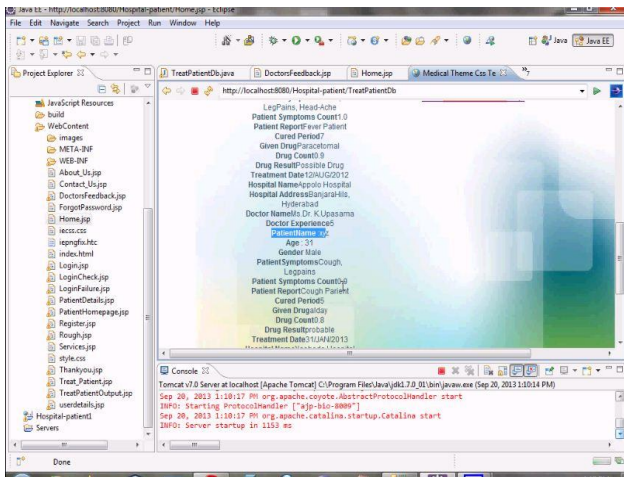

Figure : 4.3 Searching For ADR Signal Pairs

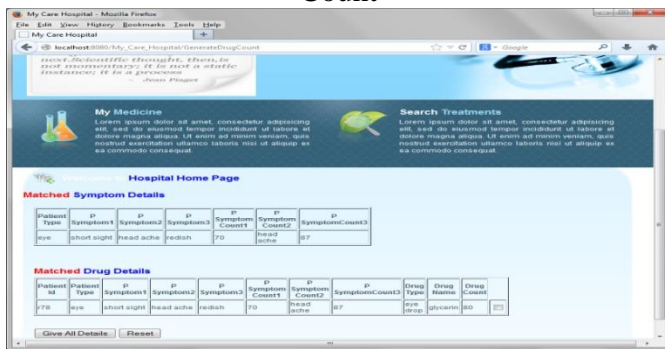Figure : **4**.4 Searching For Drugs And The Support Count

Figure : 4.5 Transformed Data & Association Rules

V. CONCLUSION

In our work, we have developed a mining technique to provide a effects of ADR and also gives the drug suggestion for the immediate treatment. Many significant works have been made regarding ADR. Still it has more scope of visibility in it. Our work brings out the clear view of mining algorithms and it enhance the drug safety .This paper gives out the exclusive causal leverage measure to suggest the best drug from others. It will help the people from adverse effects of taking the unknown drugs. Finding out the right drug at right time without the causality of drug is difficult task and here we have developed a new technique to find out the exact drug for the patient based on the support count. Our concept involves exclusive causal leverage measure, Multi gamma poisson shrinker algorithm and Support count based on association rules.

VI. FUTURE ENHANCEMENT

In future, this work can be extended through a globalized network. Where the ADR signal pair can be placed in a cloud environment, where the resource can be easily taken from anywhere and anytime. To ensure security authenticated users can only allowed to take this. Many methods were implemented to find out the ADR effects and used many algorithm to extract the drug suggestion. In this paper we used a more efficient algorithm that gives you the immediate treatment before post marketing trials. Our work is based on the support count it gives out the exact drugs that can be taken by the patient, Whereas by using RPD model it will give you the drug but it can cause high ADR in it. So our work is more reliable and efficient than the previous model.

VII.   REFERENCES

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