KAP of Haemovigilance among nursing staff posted at secondary and tertiary care hospitals of northern India

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ABSTRACT   *Haemovigilance is one of the most important audits about whole procedure of blood transfusion. The aim of haemovigilance is to provide better healthcare services to the patients. Blood transfusion is a very sensitive matter of treatment needs zero error during the procedure. So haemovigilance has an important place for blood safety from donor to the acceptor of blood. In this process it is important to monitor the whole of the supply chain within a blood service and identify the part where a change could make the biggest impact. It includes the donor, testing of blood, haemovigilance, and overall management arrangements. Developed counties have focused on whole blood transfusion process while still much work that could be done in these areas in developing countries. In this study we will try to observe knowledge, attitude and practices of Haemovigilance among nursing staff posted at secondary and tertiary care hospitals of northern India.*

Introduction

Vigilance is the action or state of keeping careful watch for possible danger or difficulties. In medical sciences there are several types of vigilances play important role in patient safety like biovigilance, pharmacovigilance, Haemovigilance etc. Several programs are prepared to enhance the different types of vigilance in medical field to provide better healthcare services. Haemovigilance may be defined as a set of surveillance procedures covering the whole transfusion chain (from the collection of blood and its components to the follow-up of recipients), intended to collect and assess information on unexpected or undesirable effects resulting from the therapeutic use of labile blood products, and to prevent their occurrence or recurrence. Several deaths reported during the blood transfusion procedure in different countries. So haemovigilance has an important place for blood safety from donor to the acceptor of blood. Throughout the world blood services aim to provide a life-saving service by ensuring an adequate supply of safe blood. In this process it is important to monitor the whole of the supply chain within a blood service and identify the part where a change could make the biggest impact. It includes the donor, testing of blood, haemovigilance, and overall management arrangements. Developed counties have focused on whole blood transfusion process while still much work that could be done in these areas in developing countries. Haemovigilance systems are identified as a powerful tool to influence policy development, yet these are largely under developed throughout the world. In order to make high impact and sustainable changes it is important that those in the blood industry across the world work together to improve education and training, to share experience of best practice, and to move to develop agreed standards in transfusion medicine. As already mentioned the acute medical services could not exist/completed without blood transfusions--life-savers in many situations. On other hand the transfusions can also be a quick and easy route for the transmission of infectious agents such as HIV, HBV, HCV and malaria. The major issue in all countries reported infection through blood supply specially countries with economic constraints which limit safety. Adverse event or serious adverse reaction is mostly to the recipient and it should be well coordinated between the blood transfusion system in hospital clinical stuff and transfusion laboratory, hospital transfusion committee, regulatory agency, and national health authority.

In healthcare system, secondary and tertiary care hospitals are dealing with the acute situation or referral patients. So the haemovigilance plays an important role because in such type of patients blood transfusion needs much attention to save life of patient. In developing counties like India blood transfusion is performed by the nurses under the guidance of clinicians. So nurses play most important role in the blood transfusion process and also require knowledge about the haemovigilance. Here we studied Knowledge, attitude and practices of Haemovigilance among nursing staff posted at secondary and tertiary care hospitals of northern India.

Materials and Methods

The study was performed among the nursing staff posted at different medical colleges of Lucknow, India and nearby from Jan 2012 to Dec 2014. Total 200 nurses were enrolled for the study. Written informed consent from the participants was obtained and confidentiality was assured. Feedback was received from all total of 200 nurses in given time duration. The questionnaire has a format that provides information regarding three distinct domains–knowledge, attitude, and practice (KAP) among nurses. Questionnaire includes about i) Patient preparation before blood bag collection, ii) Blood pack collection, iii) Pre-transfusion initiation nursing responsibilities, iv) Post transfusion initiation nursing activities and issues. For statistical analysis SPSS tool was used as it is freely available.

Result

Findings about the studies were as following:

Patient preparation before blood bag collection

Out of 200 nurses enrolled only 160 (80%) nurses responded yes to know about the patient preparation before blood bag collection. This phase included some information about donor of past 24 hrs activities.

Blood pack collection

Out of 200 nurses enrolled only 130 (65%) nurses responded

yes to know about the blood pack collection and the storage of blood.

Pre-transfusion initiation nursing responsibilities
Out of 200 nurses enrolled only 110 (55%) nurses responded yes to know about the pre-transfusion initiation nursing responsibilities. Including basic check-ups like Blood pressure, temperature etc.

Post transfusion initiation nursing activities and issues
Out of 200 nurses enrolled only 150 (75%) nurses responded yes to know about the post transfusion activities as well as the issue.

Discussion
The overall, nurses had significant knowledge deficits of many aspect of blood transfusion. Because in blood transfusion there no place of even a single mistake.

The issue of assessing and ensuring the readiness of the patient to receive a blood transfusion is not at nurse's forehead. Eighty percent of nurses reported that they would assess the availability and patency of intravenous access line after blood bag collection as opposed to 39% in a UAE study (Hijji *et al.* 2012). Yet, 67% of the sample would administer a prescribed premedication, as opposed to 84% of nurses in the UAE (Hijji *et al.* 2012) after blood delivery to the ward. In either case, the implication is that this might eventually delay the initiation of the transfusion which could result in bacterial contamination of the unit (McClelland 2007). In practice, 43% of nurses initiated the transfusion within a range of 35–138 minutes (mean 54 minutes) after blood bag collection (Hijji *et al.* 2010). Another finding was that 87.5% of nurses in this study would act on an incomplete blood transfusion order. The implication is that nurses may take fallible decisions that are within the medical domain and for which they are not yet prepared; this may bear unnecessary risks to patients.

Proper identification, at bedside, of a patient intended for transfusion is critical to the prevention of new errors and detection of those that could have taken place earlier (Harris *et al.* 2009). Improper identification of patient is the main cause of incorrect transfusions (Harris *et al.* 2009) that results in patient mortality and morbidity. Nurses, therefore, hold full responsibility for patient identification as a core competency. Yet, only 55% of nurses considered that patient identification is the most important action prior to transfusion initiation. This finding indicates that patient identification occupies the least priority. As such, only 2% of the nurses knew the correct steps they must perform to identify the patient. Failure to comply with this simple task has been reported in other studies (Hijji *et al.* 2012; Saillour-Glénisson *et al.* 2002) and may explain why nurses'' practice of this aspect was deficient (Hijji *et al.* 2010). In the UK, Stainsby *et al.* (2005) described a workshop to investigate local safety improvement initiatives in patient identification and bedside checking. The workshop presentations outlined a variety of technological (Barcoding, red label system, photo identification) and nontechnological (Continuing education and training) solutions that were selected by an expert panel for further evaluation and possible development. Increasing the risk of bacterial proliferation is a recurrent theme at this phase. This is because 218 (72%) claimed that each unit of blood needs to be warmed prior to administration using traditional, invalid, and risky methods. This is a longstanding and widely spread misconception held by nurses and was earlier reported from Turkey (Bayraktar & Erdil 2000) and the UAE (Hijji *et al.* 2012). What nurses need to know is that they must stop this habitual practice (McClelland 2007) and realise that there are clinical indications for blood warming (WHO 2002) which are known only to 1% of them. Nurses should never use hot water and microwave to warm blood as this could result in hemolysis which could be life-threatening.

The majority of nurses (75%) used traditional gravity-flow

administration sets. The results of this phase have also highlighted knowledge deficits that may threaten patient safety and compromise quality of care. Every nurse should be aware that most severe reactions occur during the first 15 minutes of setting up a transfusion (Atterbury & Wilkinson 2001), and the severity of a reaction is proportional to the amount of blood infused (Tylor *et al.* 2005). Without proper knowledge, however, nurses may initiate a transfusion at a rate either slower or faster than recommended.

Conclusion
Blood transfusion is a very important responsibility of hospitals because only single and small mistake can lead to the death of the patient. So here it is a strict necessity of the haemovigilance. As in hospitals especially in developing countries unavailability of the sufficient number of doctors, nurses deals with all the procedure of blood transfusion. It is necessary to aware nurses about the pharmacovigilance to save the patient life and needs immediate attention. To avoid adverse reactions during blood transfusion, it is highly recommended that the nurses should be aware about all the complications may happen during the blood transfusion. This awareness should be initiated by the conducting the workshops, demos, conferences and special training about the blood transfusion as well as the haemovigilance to provide good and better health care services to the patients.

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