



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.3228877>Available online at: <http://www.iajps.com>

Research Article

**THE EVALUATION OF THE BLOOD TRANSFUSION IN
ELECTIVE CHOLECYSTECTOMY**¹Dr. Sharfe Rehman Bhatti, ²Dr. Erum Ashraf, ³Dr. Durre Nayab Bajwa¹Allama Iqbal Memorial Teaching Hospital Sialkot, ²BHU 225 JB, Tehsil Bhowana, District Chiniot, ³BHU 377 GB, Tehsil Jaranwala, District Faisalabad.**Article Received:** March 2019**Accepted:** April 2019**Published:** May 2019**Abstract:**

Objective: The main idea of this case work is to assess the ratios of transfusion of the blood and ordering of blood in the elective cholecystectomy.

Methodology: All the patients who faced the elective cholecystectomy in surgical Unit-2 of General Hospital, Lahore from January 2018 to December 2018 for a period of complete one year were the part of this case work. The cross matching of the units of blood carried out and units transfused during surgery and after surgery were in the record regardless the demography of patient and their profile for hepatitis. **Results:** A sum of one hundred and thirty two patients underwent open cholecystectomy in the duration of this case work. The arrangement of total one hundred and eighty one units of blood carried out, among them the transfusion of only nine units of blood conducted. This shows that only 4.90% blood utilization carried out whereas 95.10% was not in utilization. The ratio of cross match to transfusion was 20.11, probability of transfusion was 6.80 & transfusion index was 0.06.

Conclusion: There is no requirement of the normal regular blood cross-matching for the elective open cholecystectomy. But, one should have the confirmation the presence of blood for patients reactive with infections of HBV & HCV and for the patients suffering from the recurring attacks of acute cholecystitis.

Keywords: Transfusion, HBV, HCV, blood, cholecystectomy, profile, demography, underwent, regardless, probability, arrangement, elective, surgery, cross-matching, index.

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Please cite this article in press Sharfe Rehman Bhatti et al., *The Evaluation of the Blood Transfusion in Elective Cholecystectomy.*, Indo Am. J. P. Sci, 2019; 06(05).

INTRODUCTION:

The blood transfusion is a life-saving activity particularly in the patients undergoing surgery but it is no frequent in elective surgeries [1]. In most of the occasions, units of blood normally ordered before utilization of the elective surgeries but these blood balances are the reserves for emergency for the patients who may come with an immediate need of blood for transfusion. This also creates the issues of storage for the blood banks, shelf life loss & blood wastage [2]. The availability of the blood in emergency and the components of the blood has caused the liberal utilization of the transfusion of the blood. The high demand for the products of blood as well as blood together with increase in prices & morbidity related with transfusion was the cause of start of various case works in late years of 1970s reviewing the blood ordering and practices for the transfusion of the blood [3]. It is very common practice to demand more blood during elective surgeries.

The reduction in this matter carried out with alteration in the pattern of cross-matching of blood in relation to the various types of surgeries in action [4]. In our institute, we were regularly arranging the one blood unit for the elective cholecystectomy & 2 units for HBsAg or patients reactive with anti-hepatitis C virus. Different case works have displayed that there is very less utilization of the blood in the open elective cholecystectomies [4]. The main purpose of this case work was to assess and promote the effectiveness of the ordering system for the method of elective open cholecystectomy to decrease the not important burden on the banks of blood.

METHODOLOGY:

The patients who had faced elective open cholecystectomy in surgical unit-2 of General Hospital, Lahore during the period of complete one

year from January 2018 to December 2018 were the part of his case work. The record gathered about the crossed match units of blood, the amount of the blood used in transfusion during operation or after surgery and causes of the requirement of transfusion. The profile of all the patients for the infections of HBV & HCV carried out on regular basis. The patients under the suspicion of having malignancy or some pathology as discovered during surgery other than the cholelithiasis were not the part of this case work. Open elective cholecystectomy performed for every patient. The calculation of the blood loss during surgery carried out with the measurement of the volume of blood inside suction bottle & soaked swabs with bloods.

The level of hemoglobin measured on the very first day after the surgery. The calculation of the following indices carried out from the gathered information; C/T ratio (cross-matching to transfusion ratio) = Number of the cross-matched units of blood / number of the transfused units of blood.

A ratio of 2.50 was significant for the usage of the blood.

Probability of the transfusion (%T) = number of the transfused patients / number of the cross matched patients multiply by hundred.

An amount of thirty was showing the important usage of blood.

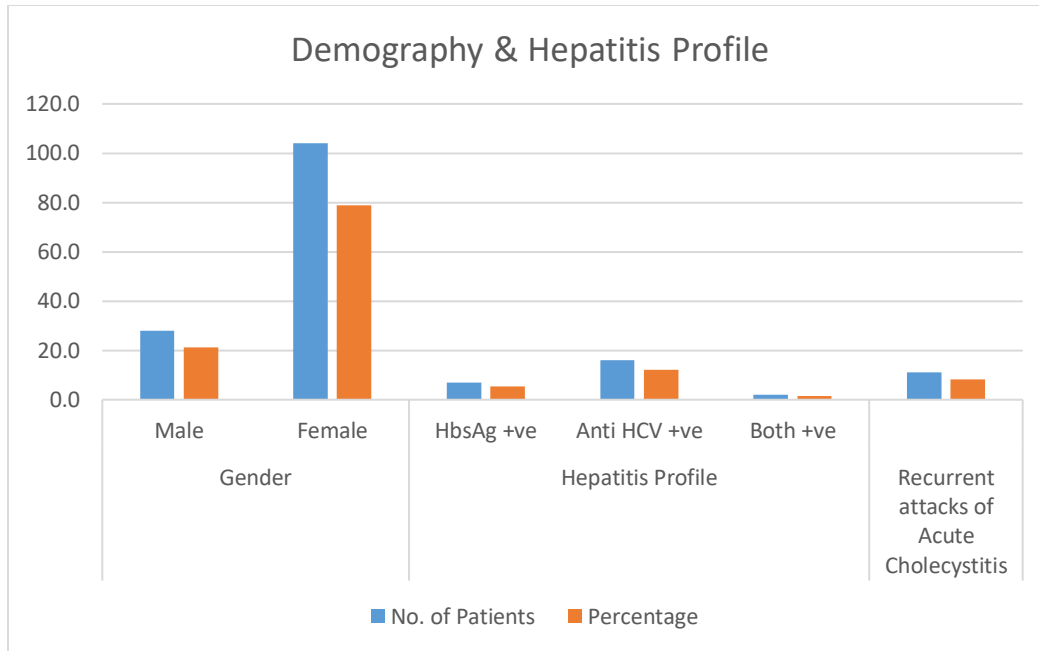
Ti (Transfusion Index) = number of transfused units / number of cross matched patients. An amount of 0.50 was the identifier of important utilization of the blood.

RESULTS:

The information of the demography of patient and their profile of infections for HCV & HBV are available in Table-1.

Table-I: Patients Demography and hepatitis profile

Variable		No. of Patients	Percentage
Gender	Male	28.0	21.20
	Female	104.0	78.80
Hepatitis Profile	HbsAg +ve	7.0	5.30
	Anti HCV +ve	16.0	12.10
	Both +ve	2.0	1.50
Recurrent attacks of Acute Cholecystitis		11.0	8.30



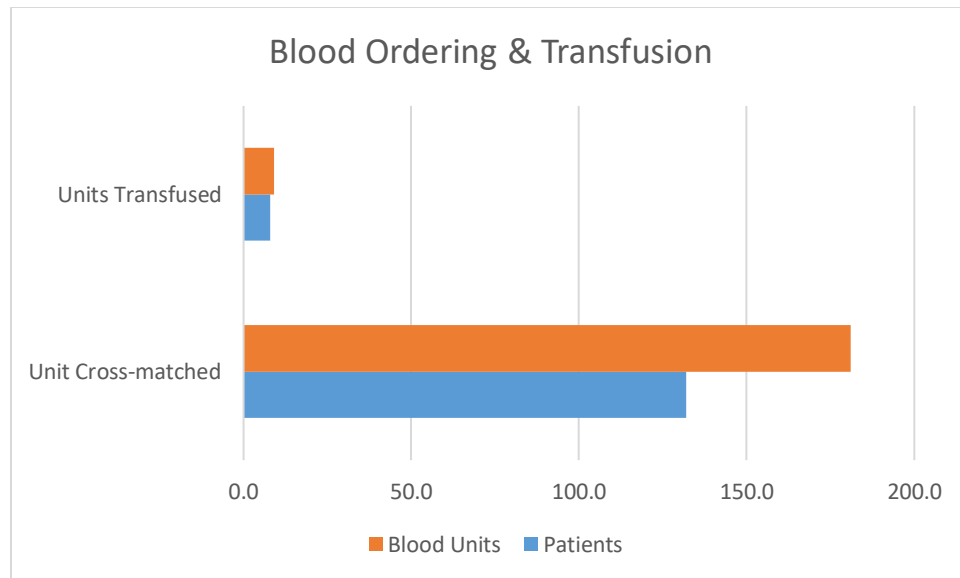
The arrangement of the one hundred and eighty one unit of blood for one hundred and thirty two patients carried out, the transfusion of only nine units performed in this case work for only eight patients. This showed that only 4.90% blood units were in utilization whereas there was no requirement of the 95.10% units of blood as described in Table-2.

The ratio of C/T (cross-matching to transfusion) was 20.10, probability of transfusion (%T) was 6.06 & Ti

(transfusion index) was 0.06. There were 2 patients with the infection of HBV and 3 patients with the infection of HCV among those 8 patients who received transfusion of blood. Total 3 patients suffering from the marked adhesions because of recurring attacks of acute cholecystitis, faced bleeding greater than normal & found with drop of hemoglobin greater than one gm%, required transfusion of blood after the surgery.

Table-II: Blood ordering and transfusion pattern of patients

Variable	Unit Cross-matched	Units Transfused
Patients	132.0	8.0
Blood Units	181.0	9.0



DISCUSSION:

The positive function of a department of surgery is depending upon the effective availability of the supply of blood every time [1]. There is an inclination to order the blood in larger quantity either by asking for high amount of the units or as a preventive measure in case of emergency. This condition increases the requirement of the blood banks because it is very difficult to mobilize a large amount of donors of blood at the same time [5]. In current research work, only 4.90% blood was in use out of total one hundred and eighty one blood units arranged for the open elective cholecystectomies. This order practice was due to the fear that blood will not be present at the time of emergency.

Boral Henry for the very first time suggested the utilization of the cross matched to transfusion ratio [3]. A cross matched to transfusion ratio of 2.50 was the indicator of significant usage of the blood. This current case work displayed a cross matched to transfusion ratio of twenty [1], which describes that lower than 5.0% blood units transfusion carried out for elective open cholecystectomy. Mead [6] stated that transfusion probability for any method. An amount of thirty was the significant amount, our amount of the probability of transfusion were 0.06. The mean amount of the units utilized per patient with cross matching indicated by Ti & emphasizes the adequateness of the amount of the ordered blood units. Boral & Henry [3] concluded that a method which utilizes less than 0.50 blood units per procedure does not need a cross matching before the surgery. An amount of 0.50 is indicative of important usage of

blood but this current case work showed the amount of 0.06 as illustrated in Table-2.

Some case works concluded that non-transfused units of blood were available as cross-matched 3 to 10 times for various patients [7]. A technician was able to cross match three times in one complete hour. This causes in 54.50% wasting of the working time of technician causing an annual bank loss of US dollars of 25,000.00 for a single one hundred and twenty bed surgery department [8].

Proper knowledge to the dangers associated with the transfusion of the blood is becoming very clear because of the spread of different features of services of transfusion of the blood and the high understanding to the procedure of the transfusion of the blood in current some years [10]. The extreme dangers associated with the transfusion of blood are under consideration like the poor administration of the blood, reactions of the delayed blood transfusion, injury of lung linked with the transfusion, the blood transfusion linked with disease of graft vs host, purpura after the transfusion & infection because of the blood transfusion [11]. Cross match is very necessary when checking the instinctive reaction in the recipient but it is not necessary to perform the matching for every procedure to reduce the expenditure as well as time.

CONCLUSION:

There is no requirement of the normal cross-matching of the blood for the elective open cholecystectomy, but it is the responsibility to confirm the presence of blood for infections of HBV & HCV and the patients with

the recurring cholecystitis attacks. These actions will be the cause of the saving of money and more effectual utilization of the blood.

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