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Patients' Perceptions of Blood Transfusion Risks in Karachi, Pakistan

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ABSTRACT

Objective: To evaluate the understanding of and attitudes toward risks of blood transfusions among transfusion recipients in Karachi.

Methods: One hundred forty-one transfusion recipients from 13 major Karachi hospitals were interviewed. Indications for transfusion were obtained by reviewing the patients' medical records.

Results: The most common indications for transfusion were surgical complications ($n = 77$, 55%), anemia ($n = 34$, 24%), and generalized weakness ($n = 15$, 11%). Most recipients ($n = 103$, 80%) had never heard of viral hepatitis, and 44 (31%) had never heard of acquired immunodeficiency syndrome (AIDS). Ninety-four recipients (66%) believed that generalized weakness was a valid indication for blood transfusion. Sixty-nine recipients (49%) were not willing to pay an increased price for blood that was screened for blood-borne pathogens.

Conclusions: Blood recipients in Karachi are unaware of the risks of transfusions, and the reasons given by the ordering physician for many of the transfusions were not consistent with international guidelines. Steps to educate the public about the risks of transfusions and practitioners about the indications for transfusion could prevent blood-borne virus transmission in Karachi.

Key Words: attitudes, blood transfusion, developing countries, knowledge, Pakistan, practice, transfusion recipient

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Both the general population and blood donors in less developed countries are more likely to be infected with

blood-borne viruses than persons living in developed countries,^{1–4} yet facilities in less developed countries are less likely to screen blood.^{5,6} Thus, efforts to reduce unnecessary transfusions are particularly important in less developed countries.

In Pakistan, medical practice is largely unregulated. Practitioners without formal training or qualifications commonly call themselves “doctor” and treat patients. The full range of modern pharmacopoeia, intravenous fluids, and blood products is widely available without a prescription in the market.^{7,8} Practitioners who meet patient expectations are financially rewarded and, therefore, popular, but medically unsound practices are common.^{9–11} If a well-trained physician resists a patient's request for an unsound intervention, the patient can seek the desired intervention from other practitioners. Thus, improving medical practice in Pakistan involves more than just training physicians.

One successful approach to improving the practices of health practitioners in Bihar, India, has been to educate the community about standards of care, using the World Health Organization's sick child algorithm, and to contract with practitioners to practice in line with those standards.¹² Similarly, in Indonesia interactive group discussions between health care practitioners and patients that challenged physicians' assumptions about patients' beliefs and set peer norms decreased the proportion of patients who received injections from 70% to 42%.¹³

Since patient expectations determine other components of clinical care in Pakistan, they may also affect the practice of blood transfusion. Thus, the authors evaluated the reported indications for blood transfusions and patients' perspectives of appropriate indications and risks of blood transfusion in Karachi.

MATERIALS AND METHODS

In Karachi, a patient's family typically purchases blood from area blood banks. Since Karachi blood banks are not regulated, there is no official list of blood banks. A list of Karachi blood banks was obtained from a prominent hematologist who trains blood bank technicians. The list contained 87 blood-bank facilities, and was believed to be

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comprehensive. Randomly selected facilities ($n = 37$) were questioned about the amount of blood they dispensed, and to which institutions.

Between August and September of 1995, Aga Khan University medical students trained as interviewers visited the 13 hospitals that transfused the most blood from the selected blood banks and interviewed hospitalized patients over 18 years of age who were transfused during their current hospital admission. The number of subjects included in the study from each hospital was proportional to the volume of blood being transfused. Patients who were critically ill, who understood neither English nor Urdu (the two national languages of Pakistan), or who were employed in the medical profession (doctors, nursing staff, technicians), were excluded.

After obtaining informed consent, the interviewers administered a structured questionnaire. The indication for transfusion was extracted from the hospital records. In the 15 cases where the indication for transfusion was not clear from the medical record, the patient was asked to provide the reason for the transfusion.

Odds ratios (OR) were used to compare responses between groups. Statistical significance was evaluated with the chi-squared test.

RESULTS

The authors visited 13 hospitals and were allowed to administer the questionnaire at 12; 11 of the hospitals were tertiary care centers. All of the 141 recipients who were approached consented to participate in the study.

The mean age of the transfusion recipients was 33 years; 91 (65%) were females. Sixty-seven (47%) had not received any formal education. One hundred thirteen (80%) lived in households earning less than U.S.\$150 (Rs 6000) per month, which is comparable to the average per capita income in urban Pakistan. Eighty (57%) were housewives; 20 (14%) were manual laborers, and 20 (14%) were office workers.

The most common indications for transfusion were blood loss associated with surgery ($n = 77$, 55%), anemia ($n = 28$, 24%), generalized weakness ($n = 15$, 11%), and trauma ($n = 13$, 9%).

One hundred thirty-five transfusions (96%) were prescribed in tertiary care hospitals by consultants, that is physicians who held a post graduate qualification. Five transfusions (4%) were prescribed by primary care physicians. One recipient received a self-prescribed transfusion. Two of five transfusions prescribed by primary care physicians were for generalized weakness, compared to 10 of 135 prescriptions ordered by consultants ($P = 0.085$).

Most recipients ($n = 103$, 80%) had never heard of viral hepatitis, and 44 (31%) had never heard of acquired

immunodeficiency syndrome (AIDS). Of the 97 recipients who had heard of AIDS, 48% were unaware that it was possible to contract AIDS from a blood transfusion. Ninety percent of transfusion recipients cited radio, television, and the print media as their primary sources of information.

Ninety-four transfusion recipients (67%) considered generalized weakness a valid indication for transfusion. This compared to 110 (78%) who considered trauma, 118 (84%) who judged surgery, and 113 (80%) who thought anemia was a reasonable indication for transfusion. The attitude that generalized weakness was a valid indication for transfusion was not associated with education or gender. Forty-eight of the 67 respondents (71%) without formal education, compared with 26 of the 36 (72%) with primary education and 24 of the 38 (63%) with secondary education or higher thought that generalized weakness was a valid reason for blood transfusion ($P = 0.41$). Similarly, 60% of males and 67% of females considered generalized weakness a valid indication for blood transfusion (OR = 0.7; $P = 0.40$).

Fifty-four recipients (38%) were apprehensive about receiving transfusions. Of these, 34 were afraid of transfusion per se, whereas only six (4% of the total study population) were concerned about disease transmission.

Eighty-nine recipients (63%) preferred family donors; the rest had no donor preference. The reasons for preferring family donors included blood safety ($n = 50$, 56%) and easy availability ($n = 32$, 56%). Sixty-nine transfusion recipients (49%) were unwilling to support an increase in the price of transfusion to ensure infection-free blood. One hundred seventeen recipients (83%) were unaware of any screening procedures. Forty-two recipients (30%) believed that blood transfusion should be available without a prescription.

DISCUSSION

The World Health Organization recommends that blood should be given only as a life-saving intervention,¹⁴ but among these transfusion recipients in Karachi, 11% received their transfusion for generalized weakness. A more detailed evaluation of patients' medical conditions would be required to evaluate the proportion of other transfusions that were unnecessary, but in other developing country settings where standardized transfusion guidelines are lacking, 17 to 75% of transfusions were found to be unnecessary.¹⁵⁻¹⁷

Most transfusion recipients in Karachi were unaware of the risks of these transfusions. Eighty percent had never heard of hepatitis B virus, one-third had never heard of AIDS. This ignorance of risks translated into unhealthy attitudes. Recipients did not know to ask if the blood was screened or the transfusion was essential. Half of recipi-

ents were unwilling to spend more money for blood that was screened, and two-thirds considered generalized weakness a valid indication for transfusion.

These results suggest two approaches to decrease transfusion-transmitted disease. First, physicians should be encouraged to prescribe transfusion in accord with international guidelines, that is, only when the benefit of transfusion outweighs the risk of pathogen exposure. After a series of educational meetings and implementation of a system of supervision in eight hospitals in Tanzania, the proportion of unnecessary transfusion decreased from 62% to 33%.¹⁷

A second step to decrease transfusion-transmitted disease is to use the general media to educate the public on the risks of transfusions and the benefits of screening blood.

There are important limitations to this study. First, it was not possible to measure precisely the prevalence of inappropriate transfusions, because no thorough independent assessment of the indications for transfusions was undertaken, but instead, data were extracted from physicians' notes in the medical records. However, the finding that 11% of cases were transfused solely for generalized weakness demonstrates that unnecessary transfusions occur, and represents a minimum estimate of the prevalence of unnecessary transfusions.

A second limitation is that the study population was not representative of all persons who receive blood transfusions in Karachi. The study was limited to adults, and it did not evaluate low transfusion volume institutions. However, practices at the tertiary care institutions studied where the most qualified physicians practice, would be expected to be better than those at other levels of care.

Improving the safety of blood transfusions in developing countries requires multiple approaches. This study suggests that educating physicians and the general public should be a part of the overall strategy.

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