Published online: 2019-08-26

Letters to Editor

Knowledge and awareness of skin donation in medical students: Overcoming the barriers

Sir,

The importance of skin banks in the management of burns cannot be overemphasised. Unfortunately awareness about skin donation is low. We conducted a study to understand the level of awareness about skin donation in medical students. A well-structured pre-test questionnaire [Table 1], information leaflet [Table 2] and then a post-test questionnaire on the knowledge of skin donation was administered to 150 final year medical students and responses elicited. Although the evaluation demonstrated significant improvement in knowledge ($P < 0.0001$) after the post-test questionnaire, it is important to know that the preliminary knowledge regarding skin donation of these students was very poor.

Table 1: Skin donation awareness Questionnaire

Please tick mark the correct option

Name:_____

Email:_____

1. Are you aware of Skin Banks?
   a. Yes.
   b. No.
2. In skin banks, most commonly the skin is procured from
   a.Live donors.
   b.Cadavers.
   c.Pigs.
   d.Goats.
3. In case of cadaveric skin donation, how many hours after the death of the individual can skin be donated?
   a. Within 6 hours.
   b. Within 10 hours.
   c. Within 12 hours.
   d. Within 24 hours.
4. Is it necessary to transport the donor to the hospital after death?
   a. Yes.
   b. No.
5. Which of the following conditions render an individual unfit for skin donation?
   a.Age less than 18 years.
   b.Age more than 90 years.
   c.Diabetes.
   d.Hypertension.
6. The following conditions render an individual unfit for skin donation, EXCEPT
   a. HIV.
   b. Skin Malignancy.
   c. Septicemia.
   d. History of old trauma.
7. How long can the skin be stored in the skin bank?
   a.Upto 3 weeks.
   b.Upto 6 months.
   c.Upto 1 year.
   d.Upto 5 years.
8. What kind of donor recipient matching is required for skin transplantation?
   a.Blood matching.
   b.HLA typing.
   c.Age matching.
   d.Anybody's skin can be transplanted to any one.
   e.Colour matching.
9. Is entire thickness of the skin harvested?
   a.Yes.
   b.No.
10. After a cadaveric skin is transplanted to a burn patient
    a.It remains there for a period of not more than 4 weeks.
    b.It remains there for a period of up to one year.
    c.It is permanently accepted by the patient's body.
    d.It remains there for a period of five years.
11. Skin is harvested from all the following parts of the body, EXCEPT
    a. Back.
    b. Legs.
    c. Thighs.
    d. Face.
12. State if true or false- There is bleeding from the site from where the cadaveric skin graft is harvested, and there is significant deformity associated with a cadaveric skin graft harvest.
    a.True.
    b.False.
13. If you/some one you know wants to donate skin, do you know whom to approach?
    a.Yes.
    b.No.

If yes, provide details ……..

14. Would you like to donate skin?
    a.Yes.
    b.No.
    c.Will make decision after more information.
15. Would you like to receive informative emails on Skin donation and Burns management?
    a.Yes.
    b.No.

Table 2: Skin donation awareness

Department of Plastic Surgery, B.J Medical College Initiative

What is a skin bank?

A skin bank is a place while cadaveric skin is processed and preserved under optimal conditions from where it can be used for the benefit of Burn victims.

When a person can donation his skin?

A person can donate his skin after his death. Skin can be donated within 6 hours from the time of death.

Who can donate skin?

Anyone can donate skin irrespective of sex & blood group. The minimum age of the donor should be 18 years but there is no upper age limit. Even a 100-year-old person can donate his skin and it will be used for treatment.

What type of donor recipient matching is required for skin transplantation?

No cross matching of blood group or HLA typing is required before placing the skin graft on the recipient.

How much time the whole Skin Donation procedure takes?

The whole procedure takes only about 30 – 45 minutes.

Is it necessary to transport the donor to the hospital after death?

No, Skin Bank Team will come to the donor's home, hospital or morgue wherever the donor is kept. We don't need to shift the donor to the operating room, hospital or ambulance.

Is the consent for skin donation taken before the skin harvesting procedure?

Yes, consent of the next of kin and a witness is required before skin harvesting procedure is initiated.

From which part of the body skin is harvested?

Skin is commonly harvested from both the legs, both the thighs and the back.

Is entire thickness of the skin is harvested?

NO, only the uppermost thin layer of the skin is harvested.

Is there any bleeding or disfigurement to the body?

No, there is no bleeding from the site where skin is harvested from and there is no disfigurement to the body. After the procedure, the area is bandaged properly. After skin harvestation, other organ donation is also possible.

What conditions render the donor unfit for skin donation?

Skin of persons suffering from AIDS, Hepatitis B & C, Sexually Transmitted Diseases, Skin Cancer, Active Skin Disease and Septicemia are considered unfit for donation. At the time of skin harvesting, blood sample from the body of the deceased is also taken and necessary test for HIV, Viral markers & Hepatitis is carried out at the Skin Bank. Old history of trauma or old history of burns does not make the donor unfit for skin donation.

Can individuals with diabetes & hypertension donate skin?

Even donors with these conditions can donate their skin.

How will the donated skin be used?

After the skin is harvested, skin is evaluated, processed, screened at the skin bank, and then supplied to the Burns Surgeon for transplanting on burn patient. When the cadaveric skin is applied on a burn patient, it acts as a temporary dressing. It is rejected by the body over a period of four weeks. But, during that period, it helps in

- Effective control of protein and fluid loss from wounds.
- Reversal of hyper metabolic state with improvement in nutritional status.
- Control of wound infection and improvement in the wound bed making it ready for acceptance of precious skin auto grafts.
- Immediate pain relief and general feeling of well being.
- Excellent biological wound cover till the auto graft donor sites become ready for reharvesting.The protein loss, exudation and pain is greatly minimized.

How is the skin preserved & how long it can be preserved?

Skin is generally preserved in 85% glycerol solution. It is stored between 4-5 degree Celsius and it can be stored for a period of up to 5 years.

Where can skin donation be done?

There are skin banks at Lokmanya Tilak Medical College at Sion, Mumbai and National Burns centre, Airoli, Navi Mumbai. Very recently, Skin bank has been opened at Surya Hospital at Pune. To register as a skin donor, one can contact these hospitals, and also direct to those interested to do the same. In case of death of an individual, skin can be donated even without prior registration by contacting the nearest skin bank.

For further queries and/or feedback, please mail at nikhil.panse@rediffmail.com or drnikhilpanse@yahoo.co.in.

As per Medical Council of India (MCI) data,[2] there are 355 Medical colleges in India training MBBS course, and every year about 44,250 medical graduates pass out of these institutes. If these students are adequately and appropriately informed regarding skin donation, we can have a huge community of individuals who can be facilitators of change and promote awareness on skin donation.

These medicos can council the relatives of the hospital deaths regarding skin donation. They can also disseminate the knowledge and promote awareness of skin donation in the general public. We tried our bit to change the current scenario.

As per our literature search, skin donation in specific and organ donation in general does not form a part of any of the popular reference books used by the undergraduates. We mailed authors and publishers of anatomy and surgery books the abstract of our study, and stressed upon them the alarming scenario of burns as a national and global health problem. They were requested to add information regarding skin donation at the relevant places in these books. Assistance was solicited from anatomy departments to interact with the undergraduates regarding skin donation.

Posters on skin donation were designed to be displayed at strategic locations like anatomy dissection halls in various medical colleges [Figure 1].

We wrote to the Maharashtra University of Health Sciences and the Medical council of India to request them to include organ donation in general and skin donation in specific as a part of the undergraduate curriculum. Both the Medical

Figure 1: Skin donation awareness poster for medicos

council and the Maharashtra University of Health Sciences responded very positively, and we are very optimistic of positive outcomes in the times to come.

Although this study was undertaken at a Medical college and tertiary care center in Maharashtra, we believe that the results obtained would be similar across most centers in the country and globally. The medical graduates needs to be sensitised towards skin donation. An attempt must be made by all of us to include in the undergraduate training topics on skin banks and skin donation.[2] Collective efforts would go a long way to address this important issue.

With a minuscule number of skin banks available to cater the needs of our mammoth population; only awareness of skin donation won't possibly solve the problem. Infrastructure up gradation and awareness creation must go hand in hand to create a measurable impact.

ACKNOWLEDGMENTS

The authors would like to acknowledge Prof. Arun Jamkar (VC-Maharashta University of Health Sciences). Padmashree Dr. Ashok Gupta (Past — MCI Board of Governors), Dr. Sunil Keswani (Director — National Burns Center, Airoli), Dr. Joshi (Prof and Head, Department of Anatomy, Medical College, Dhule), Dr. Bahetee (Prof and Head, Department of Anatomy, B.J. Medical College, Pune), Prof. Ronald Gerrits (Milwaukee School of Engineering), David Evans (Whats New editor) and Andrea Pendleton (Executive Director, American Association of Anatomist) for their support, guidance and assistance.

Nikhil Panse[1], Smita Panse[2], Mrida Jhingan[3], Priya Kulkarni[4], Giriraj Gandhi[1], Yashwant Kulkarni[5]

[3]Intern, [1]Departments of Plastic Surgery and [2]Psychiatry, B.J. Govt Medical College and Sassoon Hospital, Pune, [4]Department of Preventive and Social Medicine, DY Patil Medical College, Pune, [5]Department of Anatomy, Indira Gandhi Medical College, Nagpur, Maharashtra, India

Address for correspondence:
Dr. Nikhil Panse, Vimal Niwas, Sudarshan Society, Shivajinagar, Pune - 411 016, Maharashtra, India.
E-mail: nikhil.panse@rediffmail.com

REFERENCES

1. List of colleges teaching M.B.B.S (4th March 2013) retrived from http://www.mciindia.org/InformationDesk/CollegesCourses Search.aspx
2. Panse N, Panse S, Kulkarni P, Dhongde R, Sahasrabudhe P. Awareness and perception of plastic surgery among healthcare professionals in Pune, India: Do they really know what we do?

Access this article online

Quick Response Code:	Website: www.ijps.org
	DOI: 10.4103/0970-0358.129652