abnormalities [1-3]. Fluorescence *in situ* hybridization (FISH) analysis was carried out using TUPLE region probe (from Kreatech Diagnostics, Netherland) on metaphase and interphase cells. Presence of two intact signals on chromosome 22 ruled out 22q11.2 deletion. Thus, chromosomal analysis was carried out using the GTG-banding technique and the patient was found to be tetrasomy for sex chromosome-X i.e. 48,XXXX.

The degree of clinical presentation for tetrasomy X is highly variable, and tend to have distinctive facial features that include - epicanthal folds, flat nasal bridges, midface hypoplasia, cleft or high arched palates, hypotonia and cardiovascular defects as well as developmental and motor delays [4]. All the above mentioned features can also be observed in cases with 22q deletions as seen in the present study and hence, if only FISH study was processed, tetrasomy X would not have been diagnosed.

This demonstrate that FISH can detect only targeted anomalies whereas conventional cytogenetic can give information about the whole genome alterations and hence be a guide for further diagnostic modalities if required.

Are Fathers Catching up with Mothers in Liver Donation?

In the last decade, pediatric liver transplantation (LT) has become established therapy for liver failure in our country [1-3]. With growing awareness about the success of LT and safety of the donor operation, more parents are willing to act as donors. It is believed that in India there is apprehension amongst the male members of the family to come forward for kidney donation [4]. To study whether there is any difference in donor demographics pertaining to liver transplantation we carried out a retrospective review.

A total of 46 pediatric living related liver transplants where a parent was the donor were performed between 1998 and May 2012. The mother was the donor in 25 (8 pre-2006, 17 post-2008) cases and the father was the donor in 21 cases (3 pre-2006, 18 post-2008). Post 2006 the proportion of fathers as donors increased from 27.3 % to 51.4%, whereas the proportion of mothers decreased from 72.7% to 48.6%. There was a significant (P < 0.01) difference in the sex ratio of the parental donor when compared between the two eras. The year 2007 was chosen as the cut off between two eras because it is considered as a Acknowledgments: Dr Akinde Ralph, Mr Adeteye Olawale and Dr Jayesh Sheth for intellectual discussions. The work is partly supported by Department of Biotechnology, India.

> *FRENNY SHETH AND MADHUMITA KAUL *FRIGE's Institute of Human Genetics, FRIGE House Satellite, Ahmedabad-380015, India. fshethad1@googlemail.com

References

- McDonald-McGinn DM, Goldmuntz E, Sullivan K, Eicher P, Gerdes M, Moss E, *et al.* The 22q11.2 Deletion: Screening, Diagnostic Workup, and Outcome of Results; Report on 181 Patient. Genet Test. 1997;1:99-108
- Bartsch O, Nemecková M, Kocárek E, Wagner A, Puchmajerová A, Poppe M, *et al.* DiGeorge/ velocardiofacial syndrome: FISH studies of chromosomes 22q11 and 10p14, and clinical reports on the proximal 22q11 deletion. Amer J Med Genet Part A. 2003;117:1–5.
- 3. Tabith Júnior A, Genaro KF, Trindade Júnior AS. Velocardiofacial syndrome with facial and pinna asymmetries. Braz J Med Biol Res. 1996;29:1445-7.
- Schinzel A. Catalogue of Unbalance Chromosome Aberrations in Man. 2nd Edition. New York: Wlater de Gruyter; 2001.p. 933.

watershed in our transplant program with a substantial increase in the number of transplants and also it marked a decade of successful liver transplantation in India. Although the donors are decided on the basis of their anatomic suitability to donate, of late there has been an increase in the proportion of fathers as donors. This could be due to greater acceptability of transplantation. The factors responsible for this very welcome development need to be studied.

VIDYUT BHATIA AND ANUPAM SIBAL

Apollo Center for Advanced Pediatrics and Center for Hepatobiliary Surgery, Indraprastha Apollo Hospital, New Delhi, India. drvidyut@gmail.com

References

- 1. Kelly DA, Sibal A. Liver transplantation in children. Indian Pediatr. 2006;43:389-91.
- 2. Poonacha P, Sibal A, Soin AS, Rajashekar MR, Rajakumari DV. India's first successful pediatric liver transplant. Indian Pediatr. 2001;38:287-91.
- 3. Kaur S, Wadhwa N, Sibal A, Jerath N, Sasturkar S. Outcome of live donor liver transplantation in Indian children with bodyweight <7.5 kg. Indian Pediatr. 2011;48:51-4.
- Bal MM, Saikia B. Gender bias in renal transplantation: are women alone donating kidneys in India? Transplant Proc. 2007;39:2961-3.