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**Address for Correspondence:** Dr. Osman Sönmez,
Bezmialem Vakıf Üniversitesi Tıp Fakültesi, Kardiyoloji Anabilim Dalı,
İstanbul-*Türkiye*
Phone: +90 505 385 83 26
Fax: +90 212 621 75 80
E-mail: osmansonmez2000@gmail.com

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# Variety of referral centers and diagnoses of congenital heart diseases that required intervention followed-up in neonatal intensive care unit: Regional Report

Dear Editor,

Congenital Heart Diseases (CHD) are the most prevalent malformations of neonatal period with an incidence of 0.4%-0.8% in all live births (1, 2). Of these patients, 0.4% requires intervention in the neonatal period. Early diagnosis and treatment are important for lowering morbidity and mortality in CHD patients (3).

In our study, which aimed to determine demographic characteristics of the patients, diagnostic variety, referral conditions to the centers that would perform intervention, and patient admittance rate of these centers using the data obtained via retrospective review of the files of patients followed-up in the neonatal intensive care unit (NICU) of our hospital between January 2012 and 2013 and diagnosed with congenital heart disease that requires intervention (CHDRI), it was determined that a total of 984 patients had been followed-up in NICU, of whom 118 (11.9%) were diagnosed with CHD and 31 (%3) were diagnosed with CHDRI. The mean age of the patients at the time of admission was 4.16±4.70 (1-18) days. Of the patients, 67.7% were admitted from the state hospitals of other cities. The most frequently referred CHDRI from our unit was the transposition of great arteries (45%). Of these patients, 26% died over the course of follow-up period, whereas remaining 74% were transferred to the center, where the intervention would be performed, by air ambulance. Dr. Siyami Ersek Thoracic and Cardiovascular Surgery Training and Research Hospital was the center which accepted the highest rate of patients (22.5%) from our center for intervention.

Considering that the mean birth rate is 1.78% in our country, approximately 12.000 newborns with CHD are encountered each year. It can be estimated that more than half of these patients would be included in the pool of cardiac surgery. In Turkey, approximately 4,000 surgeries are performed each year for CHD, which indicates that each year 2.000 patients have no chance for surgery. This number increases with an addition of the patients of previous years (4).

In the present study, the mean duration of staying in NICU was 2.87±3.37 (1-15) days. This rate is gratifying in terms of indicating that waste of time that could be the patient's disadvantage has been prevented as much as possible. All of the patients were transferred by 112 airplane ambulance to the center where the intervention would be performed. In the recent years, significant steps have been taken for the improvement of surgical procedures for congenital heart diseases in Turkey. 112 air ambulance system has substantially adapted itself and become able to provide rapid patient transfer by airplane and helicopter ambulances from each province (4).

In Turkey, the frequency of CHDRI is estimated to be quite high in the Southeast Anatolia region. The majority of patients born in this region and diagnosed with CHDRI are referred to the Western provinces for treatment. Having transferred 23 patients by air ambulance in one year from our unit alone caused substantial economic loss and waste of time that could be the patient's disadvantage.

Kervan et al. (5) reported that 46 provinces had cardiac surgery and angiography services, that there were a total of 207 centers that had this service, that number of patients per center were 350.537, and that the number of centers that had cardiac surgery service for CHD was 22. In the present study, it was emphasized that the number of centers that had cardiovascular surgery and angiography services was more than enough but these clinics were not distributed homogenously according to the geographic status of the country (5). High annual rate of referral for intervention from our hospital, which is a reference center for the region, appeared to corroborate Kervan et al. (5). Thus, a national plan and strategy is needed to give cardiovascular surgery service more effectively and for the population to get this service easily from the closest center.


**Melek Akar, Bedri Aldudak*, Çiğdem Seher Kasapkara**, Heybet Tüzün, Sertaç Hanedan Onan*, Berat Kanar, Veysiye Hülya Uzel**
**Diyarbakır Pediatric Diseases Hospital, Neonatal Intensive Care Unit, *Pediatric Cardiology Clinic, **Pediatric Metabolism Diseases Clinic; Diyarbakır-*Turkey***



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**Address for Correspondence:** Dr. Melek Akar,
Çocuk Hastalıkları Hastanesi, Yenidoğan Yoğun Bakım Ünitesi,
Yenişehir, Diyarbakır-*Türkiye*
Phone: +90 505 255 05 18
E-mail: melek_akar@yahoo.com.tr

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