A retrospective study was done for all patients who had total intra-cardiac repair for cyanotic congenital heart disease from January 1992 to December 2011. The source of data was the theatre records book and the patients’ case notes. The data was analysed using Microsoft excel 2010.

Patients and methods

We carried out a retrospective study for all the patients who had intra-cardiac repair for cyanotic congenital heart disease from January 1992 to December 2011. The source of data was the theatre records book and the patients’ case notes. The data was analysed using Microsoft excel 2010.
Results

There were a total of 115 patients, 1 case in the beginning year, and 15 cases in the last year. There were 65 (56.5%) males and 50 (43.5%) females. The modal age group was 5 – 9 years (45.2%), with a mean of 8.5 ± 5.3 years, and a median of 7 years. The youngest patient was 2 years and the oldest was 34 years, both with Tetralogy of Fallot (TOF). (Figure 1)

Fig. 1: Age distribution

TOF comprised the majority of cases 108 (93.1%), with double outlet right ventricle (DORV) being the remaining 7 cases (6.9%). Most of the TOFs (78 cases; 72.2%) needed palliation with the MBTS, whilst the remaining 30 (27.8%) had primary correction. The mean duration of an MBTS before total repair was 2.3± 0.9 years. Ten (9.3%) of the TOF patients had bilateral MBTS due to occlusion of the first shunts. Twenty-two cases (19.1%) had significant complications. The details are shown in Table 1.

Table 1: Post-operative complications

<table>
<thead>
<tr>
<th>Complication</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding requiring Re-</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td>exploration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARF requiring dialysis</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td>CHB requiring PPI</td>
<td>4</td>
<td>3.4</td>
</tr>
<tr>
<td>Mortality (30-day)</td>
<td>16</td>
<td>13.9</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>24.3</td>
</tr>
</tbody>
</table>

ARF = Acute renal failure, CHB = complete heart block, PPI = permanent pacemaker implantation

Discussion

A total of 115 cases were studied. One case was done in the first year of the study and 15 cases in the last year. This increase is due to the general increase in the population of the country, and also the increased awareness of the referring doctors of the existence of such a facility. There were more males (56.5%) than females. The mean of 8.5 ± 5.3 years is similar to that found by K. Hashemzadeh of 8.23 ± 4.90. In our environment, this mean age is a reflection of two main factors; symptomaticity and financial accessibility. Either this is when the child is most symptomatic and so the parents bring him to the hospital, or he has been symptomatic earlier but this is when it is financially possible for them to have the surgery.

The commonest lesion encountered was TOF, 108 (93.1%) cases. This is similar to other studies, where TOF has proved to be the commonest cyanotic congenital heart disease. Some of the TOFs needed staged repair, whilst others had primary repair. Thirty patients (27.8%) had primary repair. These were the pink Fallots and TOFs with PDA. Our mean duration between the palliation and total repair was 2.3± 0.9 years, which is within the reported range of0.5 – 4.6 years. The total repair was done under cardiopulmonary bypass, with transatrial approach, infundibular myectomy, repair of the VSD with autologous pericardium, and transannular patch repair of the right ventricular outflow tract (RVOT), also with autologous pericardium. The VSD patches in the DORVs were baffled in order to minimize obstruction of the left ventricular outflow tract (LVOT). Two of the DORV patients had only widening of the RVOT due to difficulty in constructing the baffle.

The overall complication rate was 19.1%. The re-exploration was a non-surgical bleed, the ARF was treated with peritoneal dialysis (PD), and the patients with CHB had PPI at a mean of the 18th post-operative day. The 30-day mortality of 16 cases (13.9%), is in the range of other reported studies of 6.9 – 17.7%. Our mortalities were due to acute right heart failure in 10 cases (8.7%), LVOT obstruction in 3 cases (2.6%) with a post mortem diagnosis of DORV instead of TOF diagnosed pre-operatively and 3 cases (2.6%) of sudden cardiac arrest in the ICU.

Conclusion

Presently, total intra-cardiac repair is the logical conclusion in the management of most cyanotic congenital heart diseases. Excellent long-term survival following total repair has been reported in many studies. This study revealed acceptable complication rates and a good outcome.
References


5. HOKANSON JS., MOLLER JH. Adults with tetralogy of Fallot: long-term follow-up Cardiol Rev. 1999 May-Jun; 7(3):149-55


