A 12 YEAR RETROSPECTIVE STUDY ON OESOPHAGEAL ATRESIA/ TRACHEOOESOPHAGEAL FISTULA IN HOSPITAL SULTANAH BAHIYAH BETWEEN 2009 - 2021

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Objectives:

- To analyze patient demographics and post-operative outcomes (anastomotic stricture, anastomotic leak, refistula rate, mortality)

Inclusion criteria:

- All patients who underwent surgical repair for OA/TOF in HSB from 2009-2021.

Exclusion criteria:

- Patients with OA/TOF who did not survive to surgery.

Sampling method:

- Universal sampling.
- Total cases N=66

Data collection:

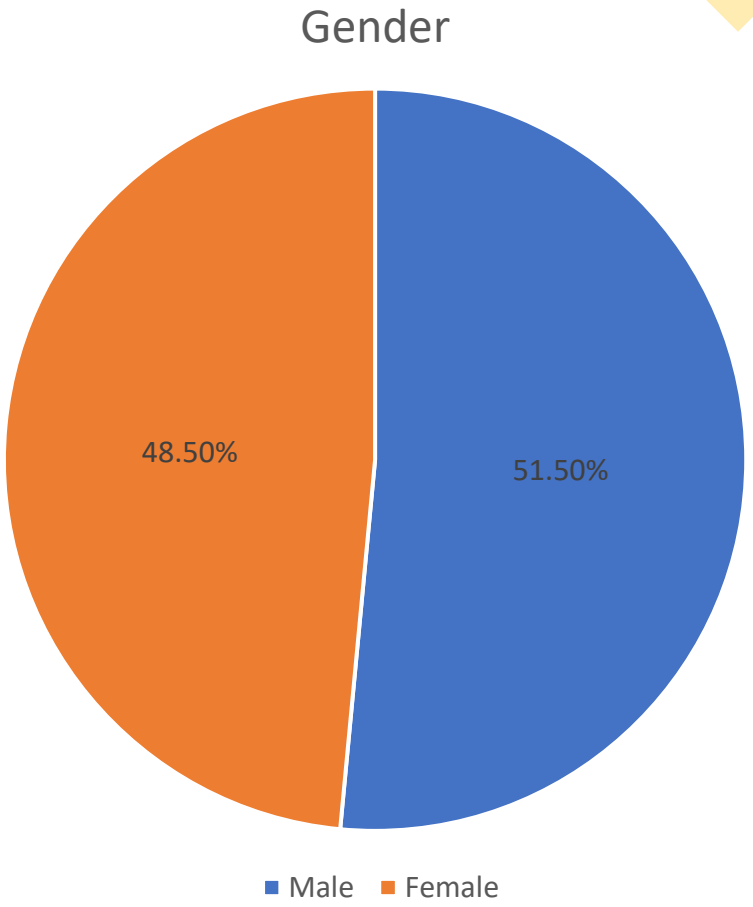
- Operation registry
- E-Hospital Information System

Data analysis:

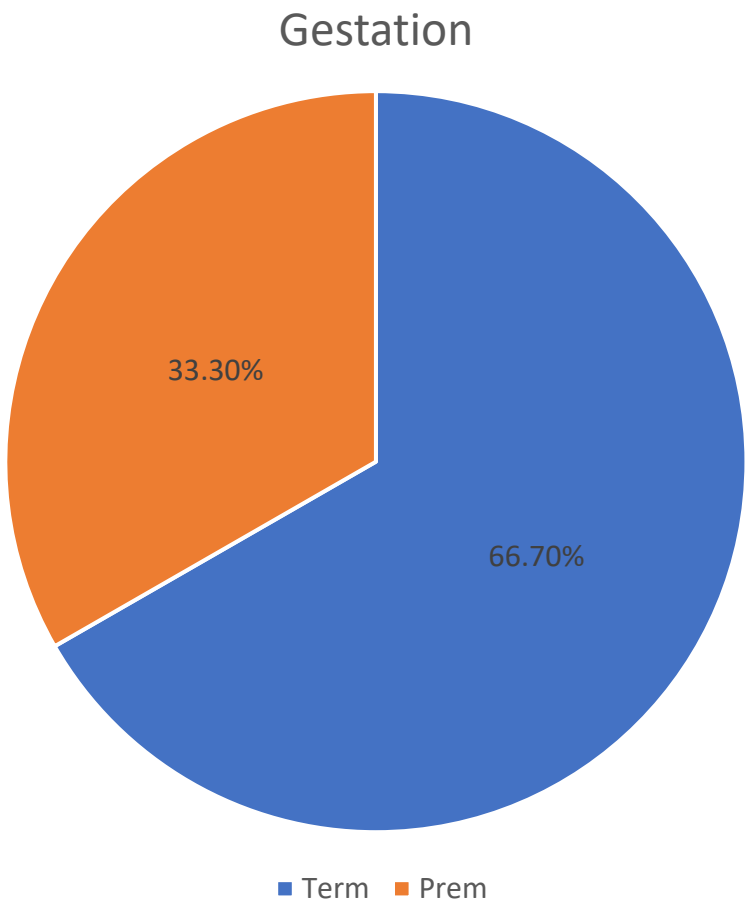
- IBM SPSS Version 20
- Demographics, outcomes – descriptive statistics
- Factors affecting mortality - Pearson chi-square test & Fisher’s exact test.

Demographics

Gender (N=66)	
Male	34 (51.5)
Female	32 (48.5)

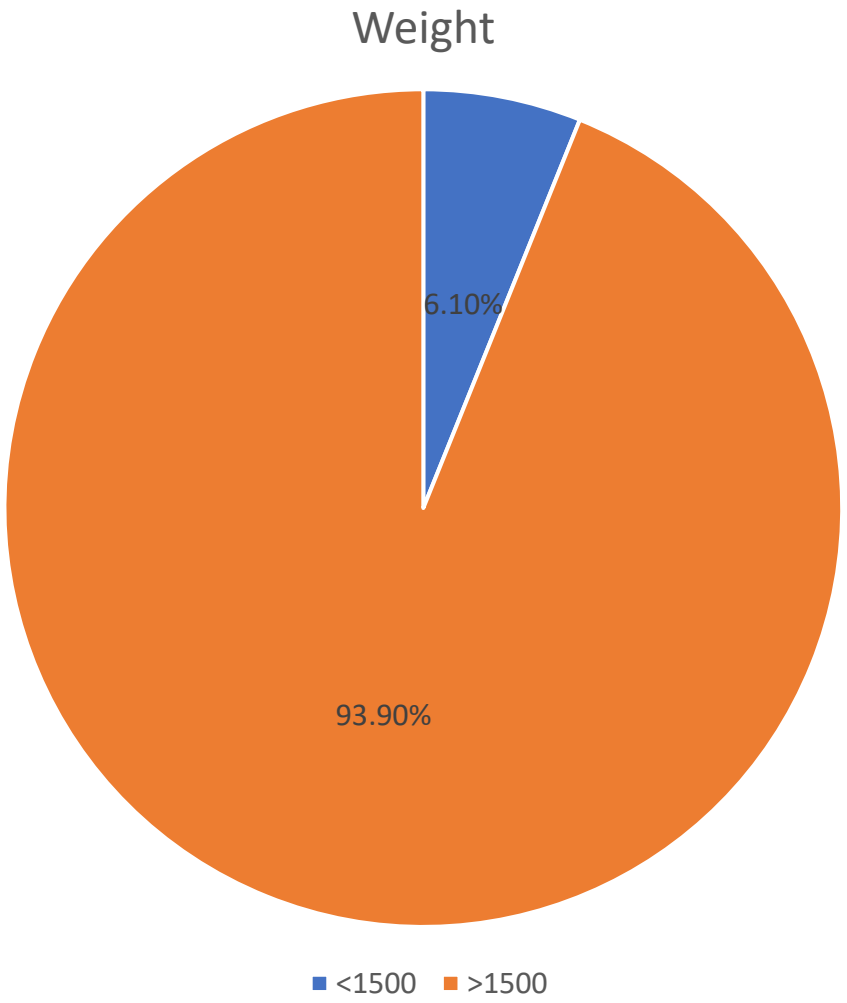


Gestation (N=66)	
Term	44 (66.7)
Prem	22 (33.3)

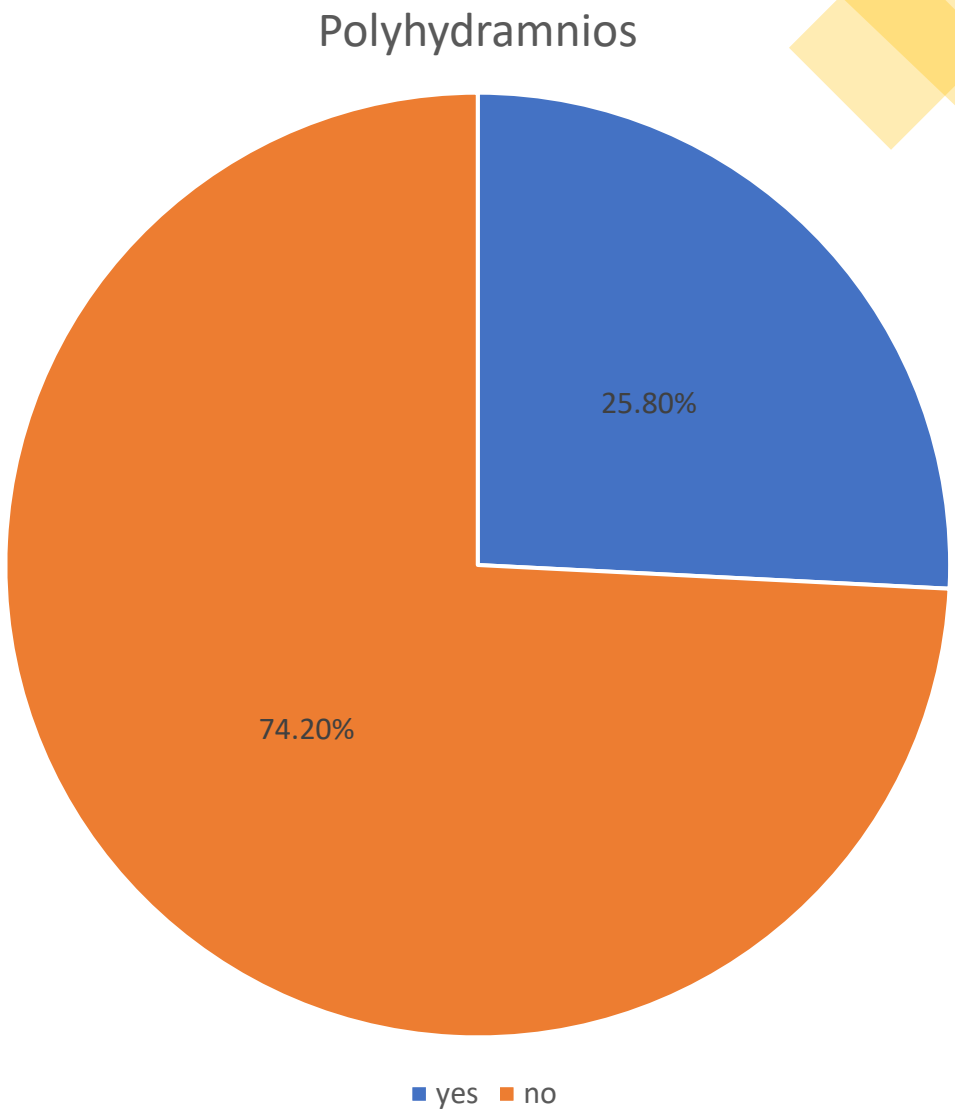


	Min	Max	Mean	SD
Weight	1.48	3.76	2.5	0.085

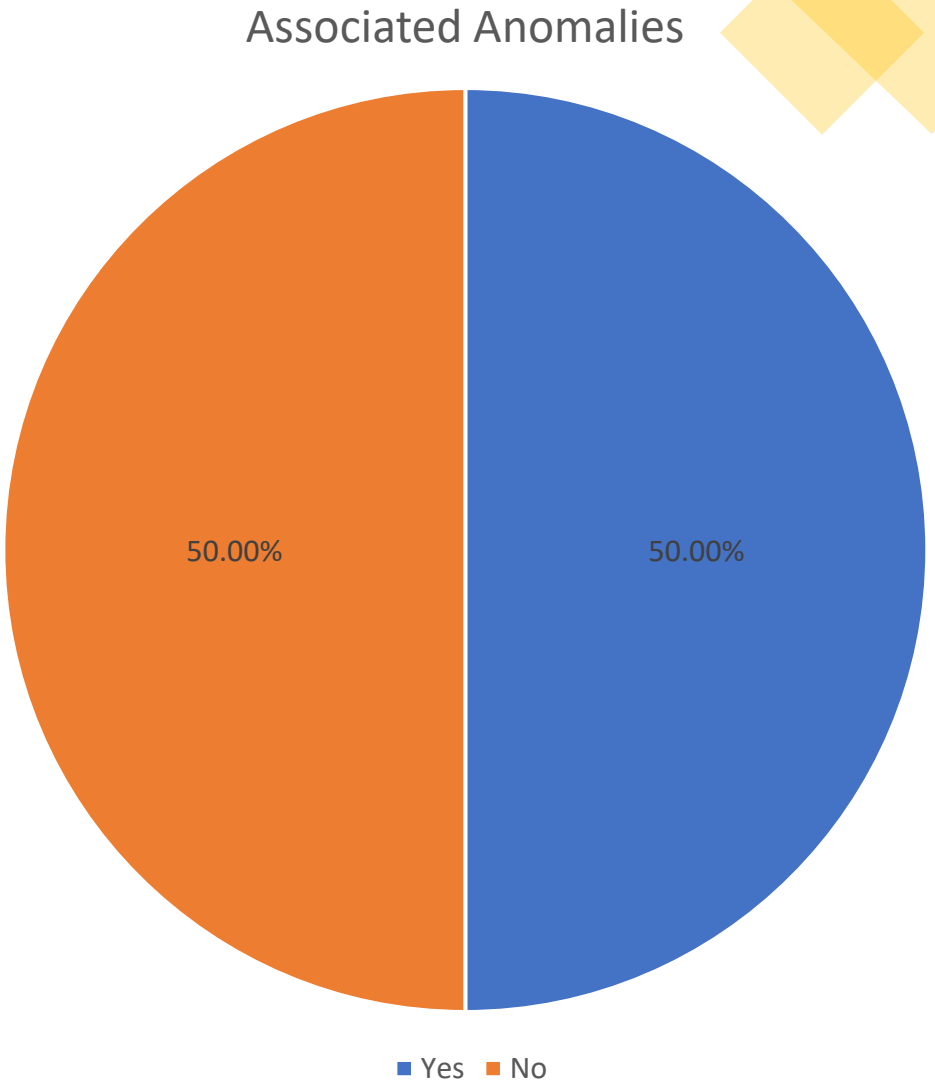
Weight	
<1500	4 (6.1)
>1500	62 (93.9)



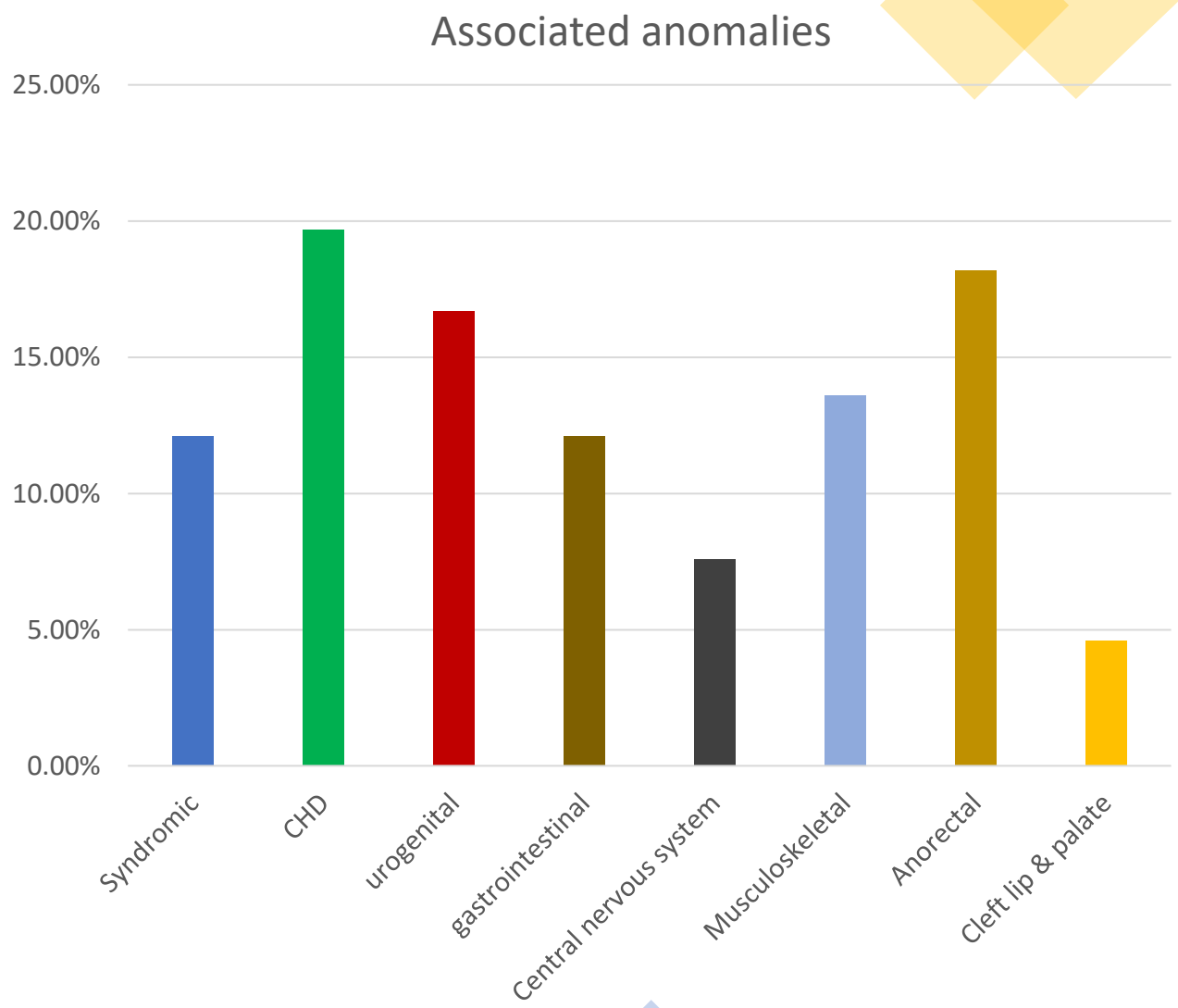
Polyhydramnios (N=66)	
Yes	17 (25.8)
No	49 (74.2)



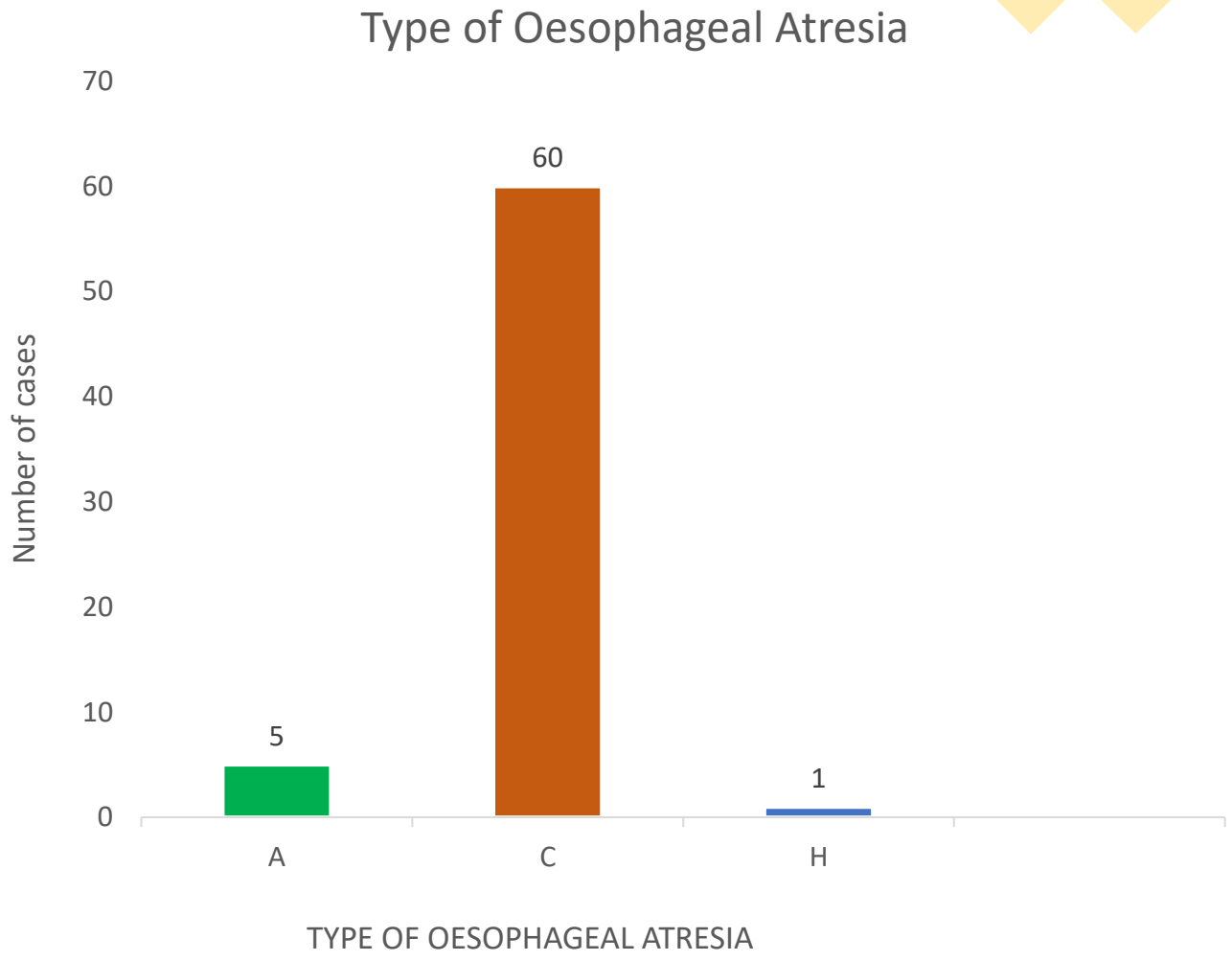
Associated anomalies(N=66)	
Yes	33 (50.0)
No	33 (50.0)



Associated anomalies (N=66)	
Syndromic	8 (12.1)
Congenital heart disease	13 (19.7)
Urogenital	11 (16.7)
Gastrointestinal	8 (12.1)
Central nervous system	5 (7.6)
Musculoskeletal	9 (13.6)
Anorectal	12 (18.2)
Cleft lip and palate	3 (4.6)

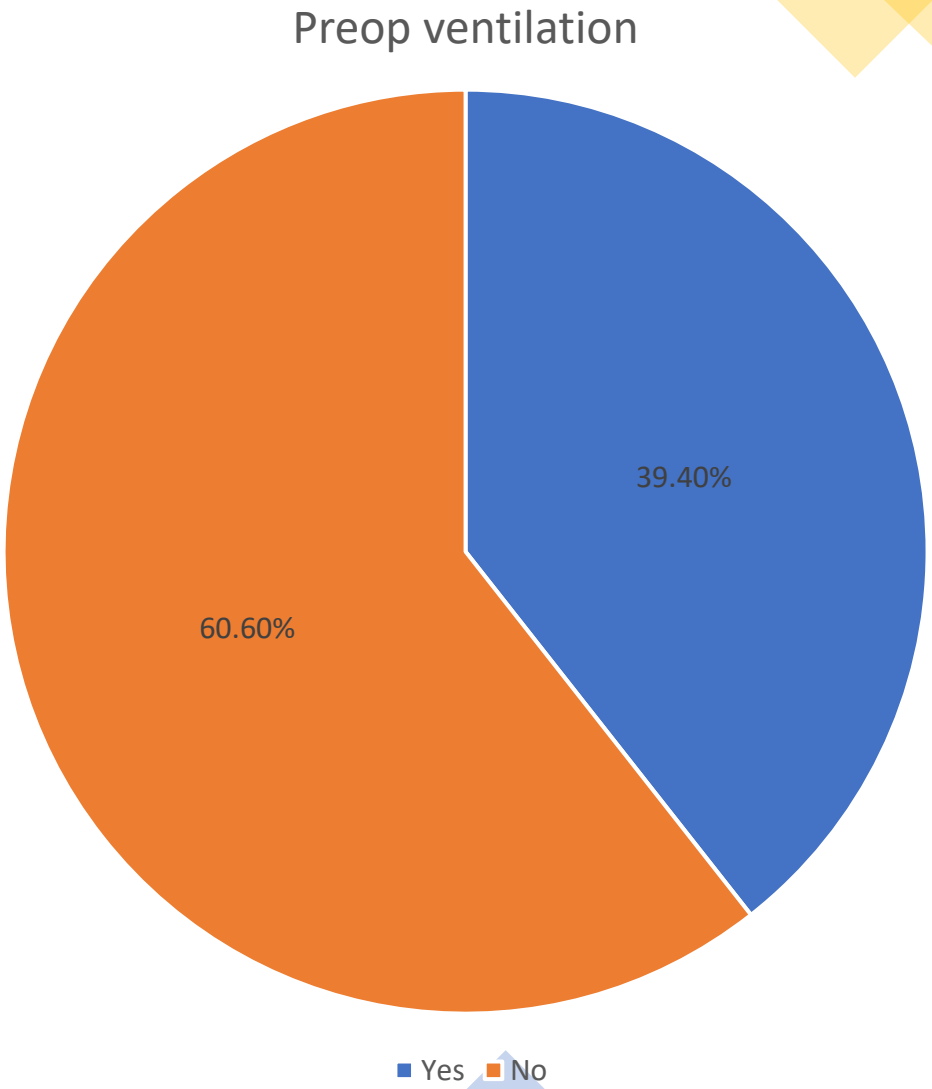


Type (N=66)	
A	5 (7.6)
C	60 (90.9)
H	1 (1.5)

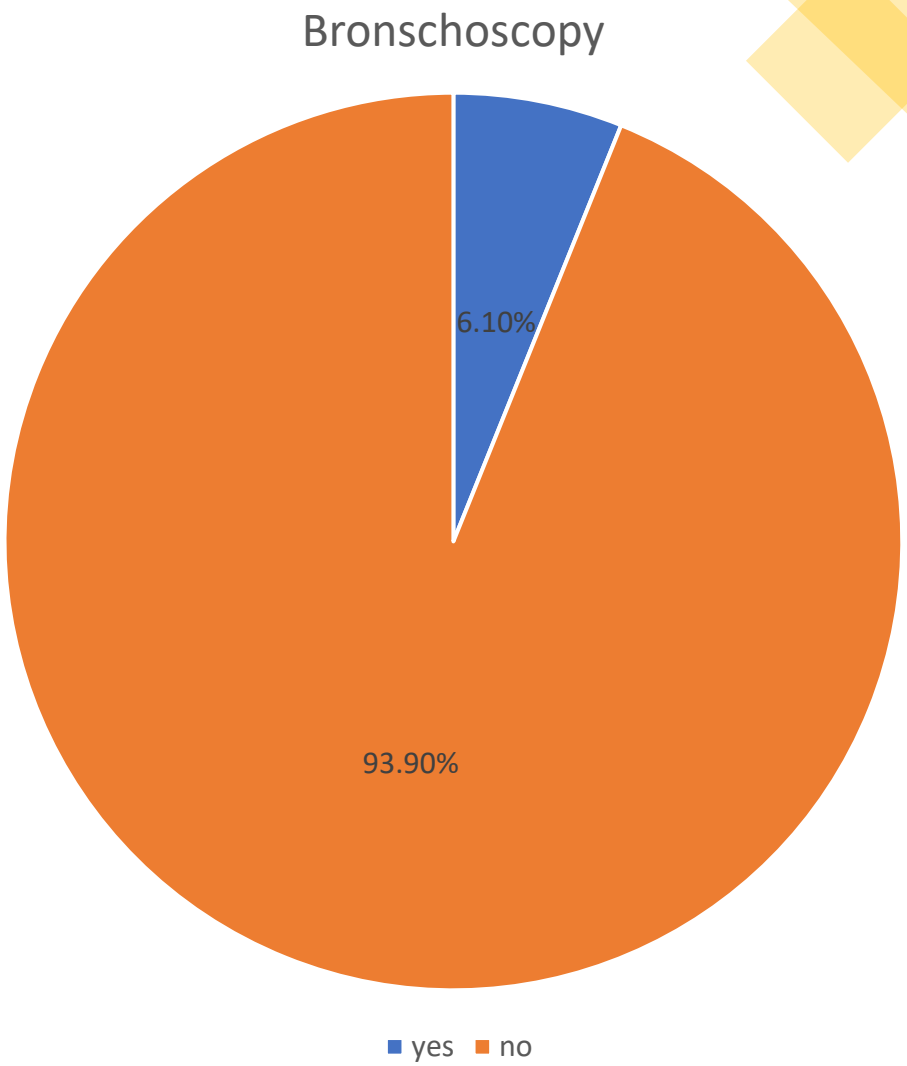


Management

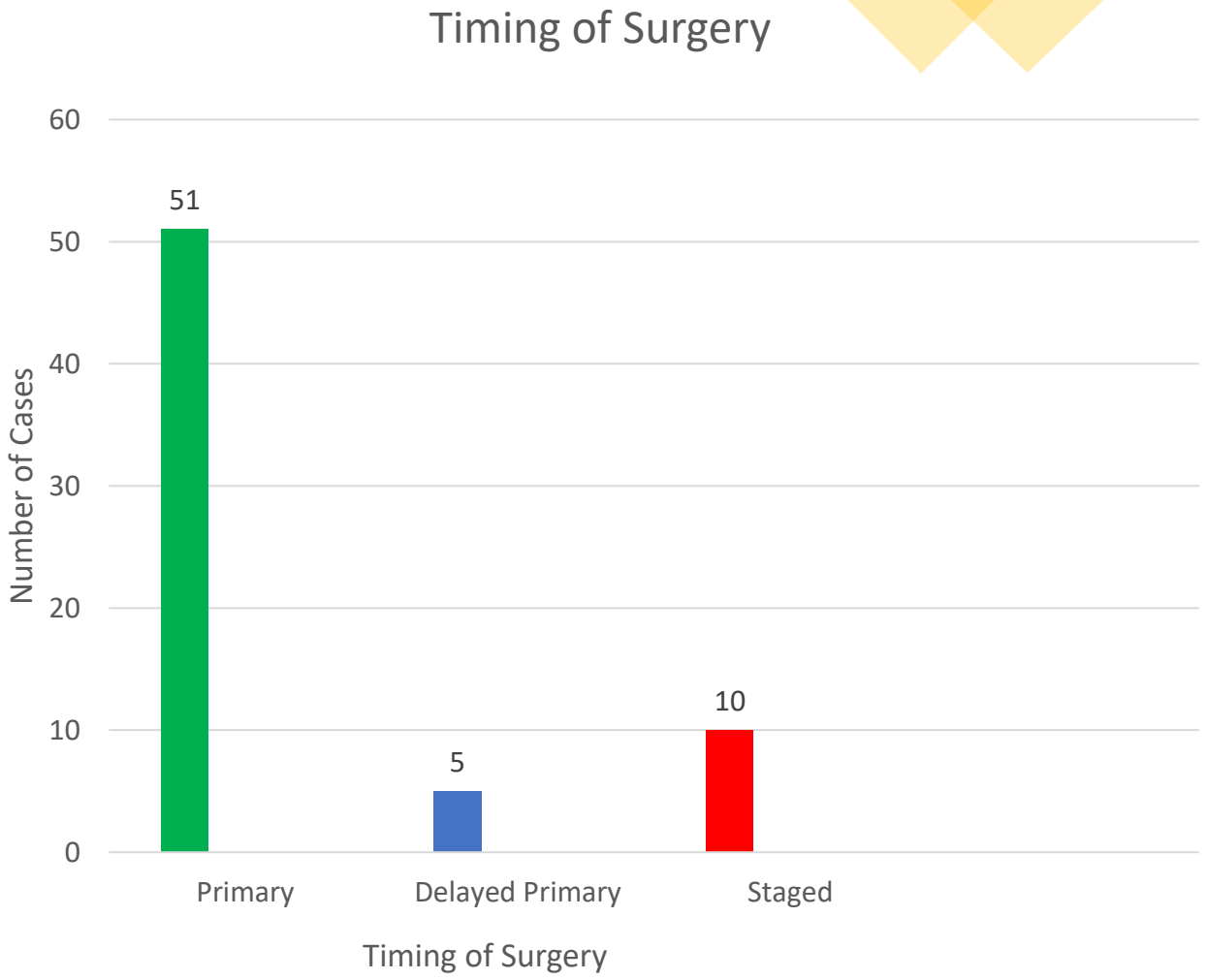
Pre-op ventilation (N=66)	
Yes	26 (39.4)
No	40 (60.6)



Bronchoscopy (N=66)	
Yes	4 (6.1)
No	62 (93.9)



Timing of surgery (N=66)	
Primary	51 (77.3)
Delayed primary	5 (7.6)
Staged	10 (15.2)



	Timing of surgery		
Type	Primary	Delayed	Staged
A	0	5	0
C	50	0	10
H	1	0	0

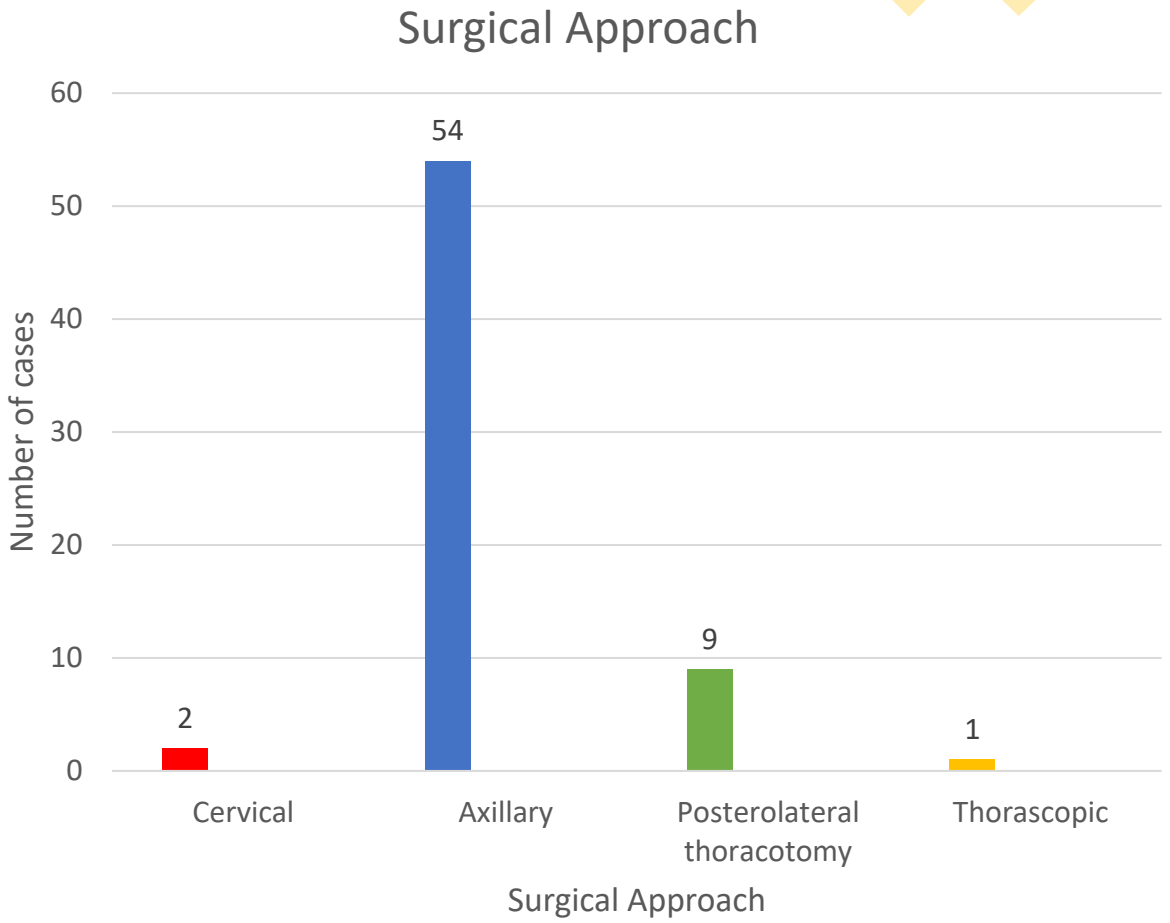
Delay primary anastomosis (5)

- 4 direct anastomosis,
- 1 gastric pull-up.

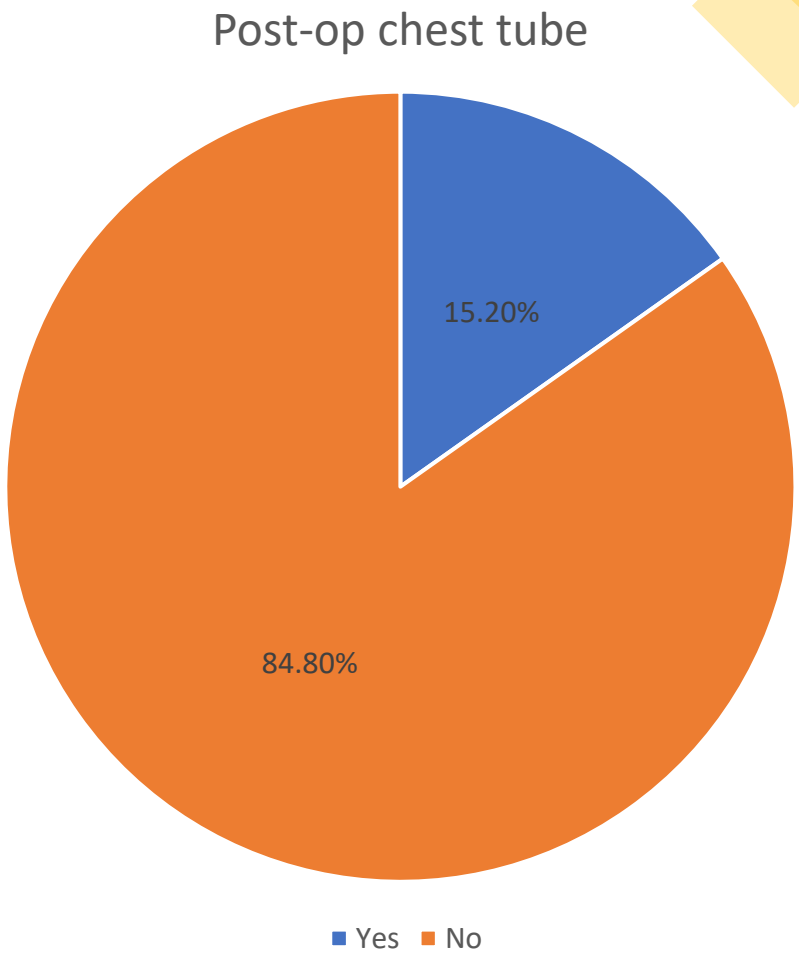
Staged repair (10)

- 6 premature with LBW,
- 2 unstable during 1st operation,
- 1 long gap,
- 1 perforated stomach

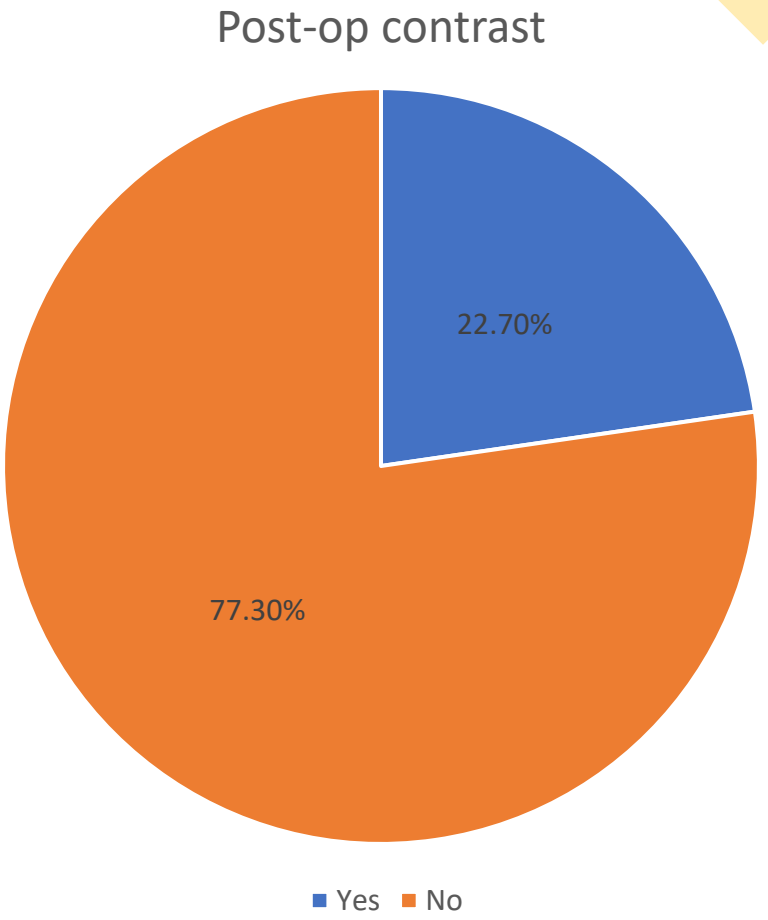
Approach (N=66)	
Cervical	2 (3.0)
Axillary	54 (81.8)
Posterolateral Thoracotomy	9 (13.6)
Thoracoscopic	1 (1.5)



Post op chest tube (N=66)	
Yes	10 (15.2)
No	56 (84.8)



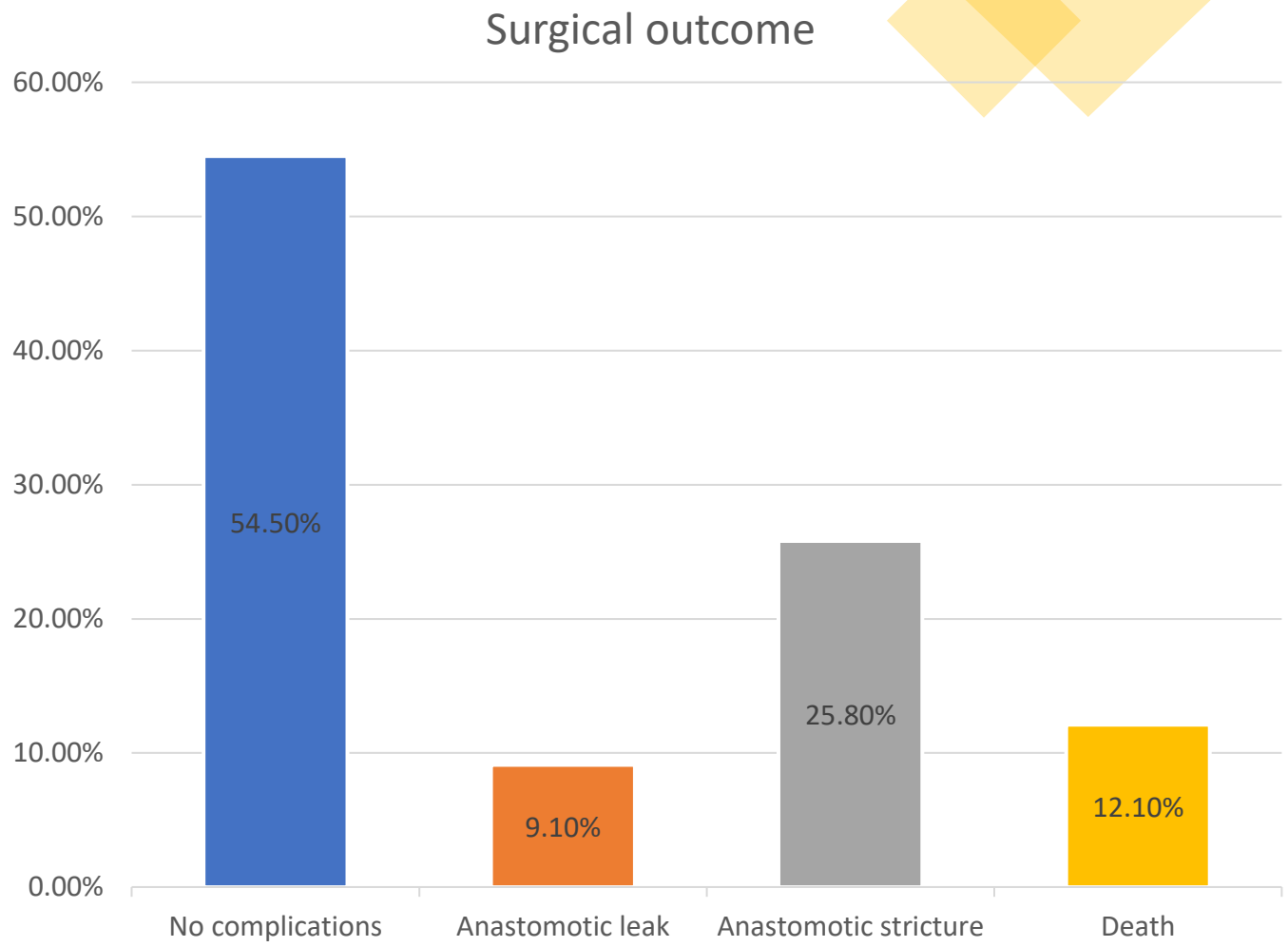
Post op contrast (N=66)	
Yes	15 (22.7)
No	51 (77.3)



	Min	Max	Median	IR
Age at surgery (days)	1	240	2	1
Post op ventilation (days)	2	60	4	5
Duration to full feeding (days)	8	55	13	47
Duration to discharge (days)	9	80	17	15

Outcome

Surgical outcome (N=66)	
No complications	36 (54.5)
Anastomotic leak	6 (9.1)
Anastomotic stricture	17 (25.8)
Death	8 (12.1)



Anastomotic leak (6)

- 3 conservative,
- 2 re-thoracotomy and repair,
- 1 abandon oesophagus and gastric pull-up at 2y.o.

Anastomotic stricture (17)

- 16 dilatation (1-17x, 1 perforation during dilatation, repaired with fibrin glue),
- 1 re-thoracotomy, excision and re-anastomosed.

Mortality (8)

No	Gestation	Weight (kg)	Assosiated anomalies	Cause of death
1	Prem, 33w	1.9	CHD (VSD), dysplastic ear	Severe NEC with ARDS
2	Prem, 33w	2.49	CHD (TOF), absent corpus callosum, absent right kidney, anorectal malformation, malrotation with midgut volvolus	Septicaemic shock
3	Prem, 33w	1.54	CHD (hypoplastic left heart), duodenal atresia, polydactyly	Hypoplastic left heart syndrome
4	Prem, 32w	1.3	Anorectal malformation, hemivertebrae	Nosocomial pneumonia
5	Prem, 31w	1.7	Down syndrome, cleft lip and palate, duodenal atresia, malrotation.	Not documented
6	Term	2.62	Edward syndrome	Edward syndrome
7	Term	1.3	Edward syndrome	Edward syndrome
8	Term	2.25	CHD, absent right kidney, duodenal atresia, malrotation.	DIVC, pulmonary haemorrhage, renal impairment.

	Mortality (%)	P value
Weight <1500g	2/4 (50.0)	0.069 f
Prematurity	5/22 (22.7)	0.062 c
Preoperative ventilation	5/26 (19.2)	0.247 f
Associated anomalies	8/33 (24.2)	0.005 f
Congenital Heart disease	5/14 (35.7)	0.002 c

Note:
c - Pearson chi-squared test
f – Fisher's exact test

	NARASIMMAN 2013 (2000-2009) N=47	HSB 2021 (2009-2021) N=66	MIDWEST SURGICAL CONSORTIUM 2017 (2009-2014) N=292
Anastomotic stricture	14.9%	25.8%	43.0%
Anastomotic leak	25.5%	9.1%	18.0%
Recurrent fistula	0	0	5.0%
Mortality	23.4%	12.1%	6.0%

CONCLUSION

- Oesophageal atresia has a high association with other congenital anomalies (50.0%).
- Presence of multiple congenital anomalies (p=0.002), congenital heart disease (p=0.006)
- Lower birth weight is associated with a higher mortality rate $t(64)=2.652$, $p=0.01$.
- A multidisciplinary team effort involving the paediatric surgeon, neonatologist and anesthetist is important to improve survival outcome in this group of patients.

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