

# **Intra-abdominal Hypertension In Neonates Following Congenital Diaphragmatic Hernia Repair: Correlation To Early Postoperative Respiratory And Gastrointestinal Outcomes**

**Elango Thambusamy<sup>1</sup>, CR Thambidorai<sup>1</sup>, Chin Seng Gan<sup>2</sup>, Srihari Singaravel<sup>1</sup>, Shireen Anne Nah<sup>1</sup>,  
Anand Sanmugam<sup>1</sup>**

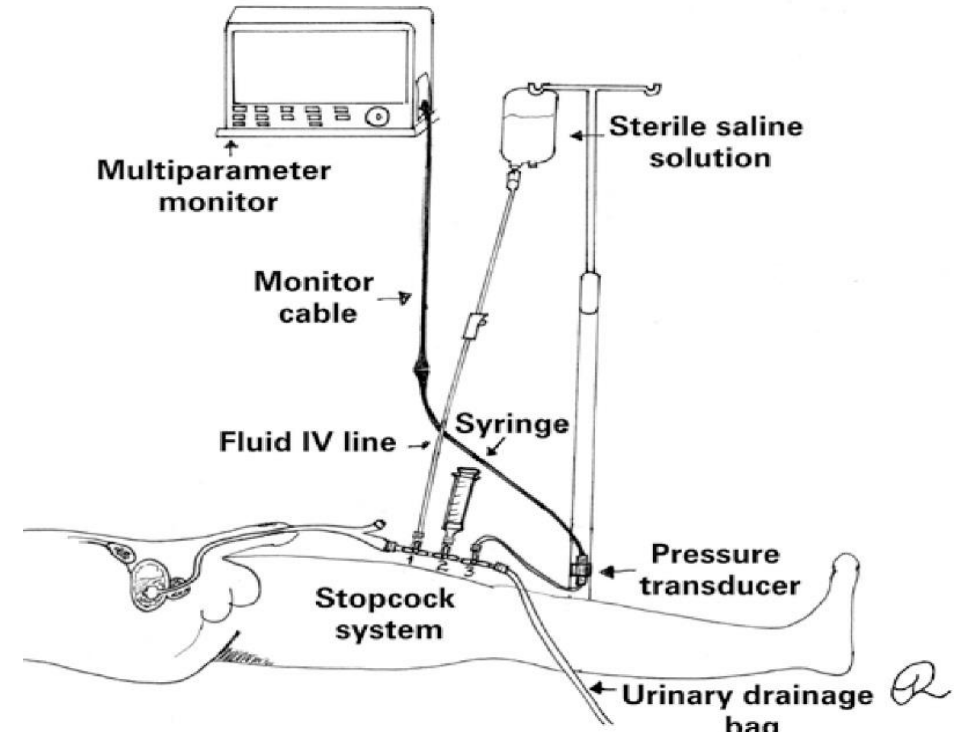
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- **Increased intra-abdominal pressure (IAP)** is seen in neonates after congenital diaphragmatic hernia (CDH) repair due to reduction of thoracic content into the relatively smaller abdominal cavity.
- In neonates, **IAP  $\geq$  11mmHg** is considered Intra-abdominal hypertension (IAH).
- However, there are only few studies on IAH in neonates post CDH repair.

- To determine the **incidence of IAH** in neonates post CDH repair.
- To evaluate the relationship between **IAH** and:
  - **Duration of respiratory support**
  - The **early return of gastrointestinal function**

Study Type	Prospective Study
Study Population	All Neonates who had CDH Repair
Study Duration	June 2018 – October 2020
IAP Measurement	<ul style="list-style-type: none"><li>• Intravesical pressure as proxy</li><li>• Closed system transducer</li><li>• 5 consecutive days post-surgery</li></ul>



- The daily median value for IAP

IAP (mmHg)	IAH Classification
< 11	No IAH
11 – 15	IAH
> 15	Severe IAH

- Spearman Correlation analysis was used to measure the strength of association between nonparametric data.
- A value of  $p < 0.05$  is considered as statistically significant

# 7 Results: Demographic

Type of CDH Repair	Number of Cases in Study (n)		Mesh Repair			
			Yes		No	
	n	%	n	%	n	%
Open Repair	23	95.8	2	8.7	21	91.3
Laparoscopic Repair	1	4.2	-	-	1	100.0
<b>Total</b>	<b>24</b>	-	2	9.0	22	91.0

- There were **24 neonates** included in this study
- Median age at operation: 4 days of life (range 1-6)

# Results: Trend of Intra-abdominal Pressure Post CDH Repair

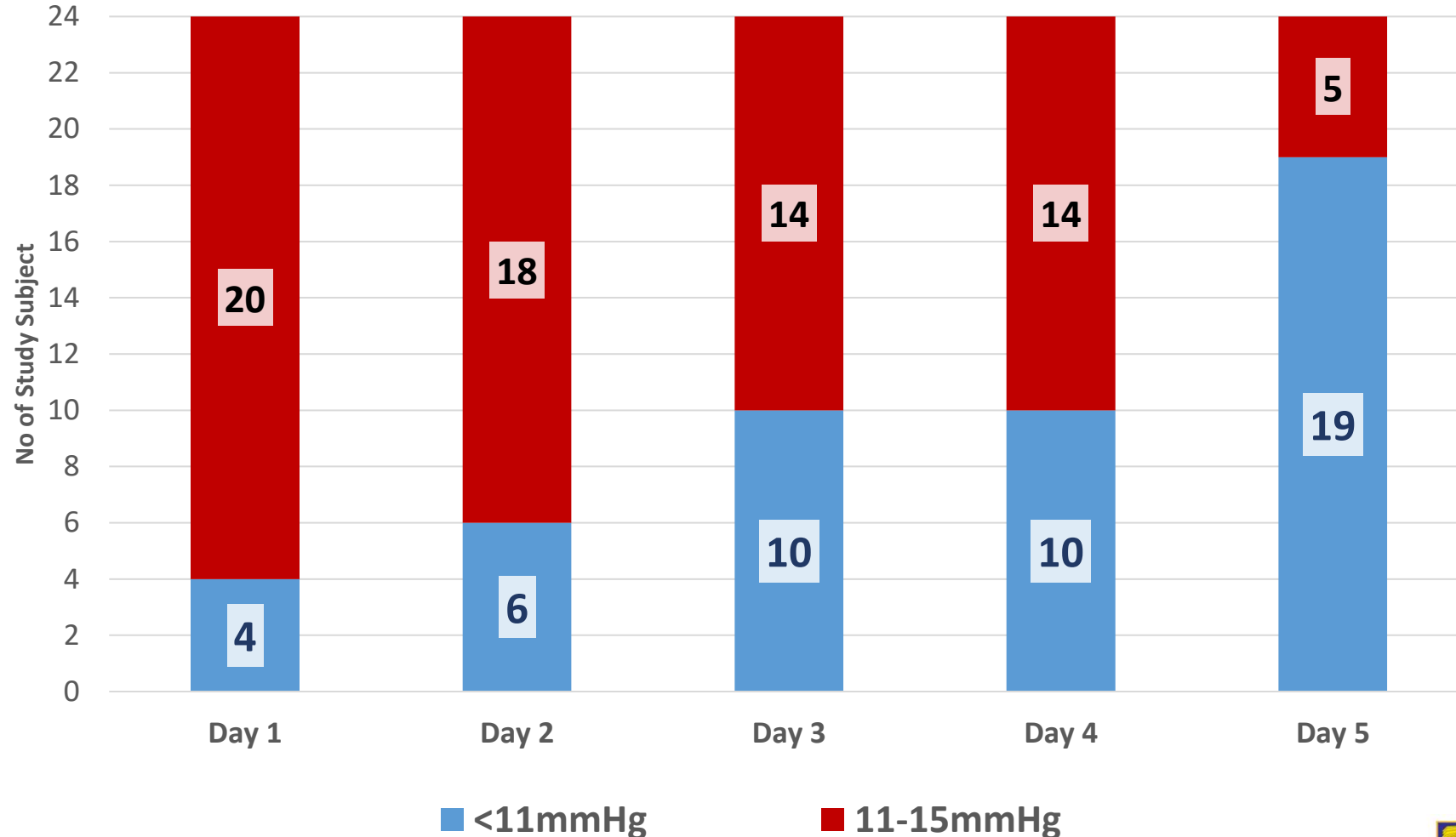
Incidence of IAH (83%)

(75%)

(58%)

(58%)

(20%)

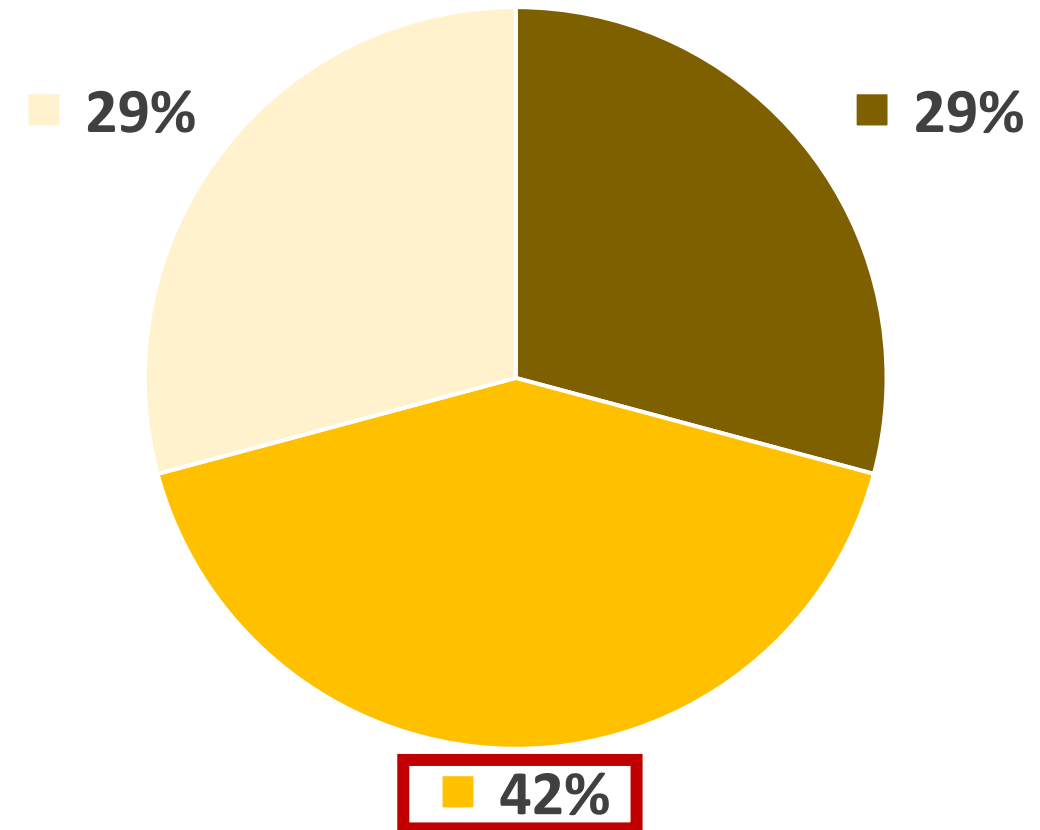


- **None** of the study population recorded severe IAH >15mmHg.

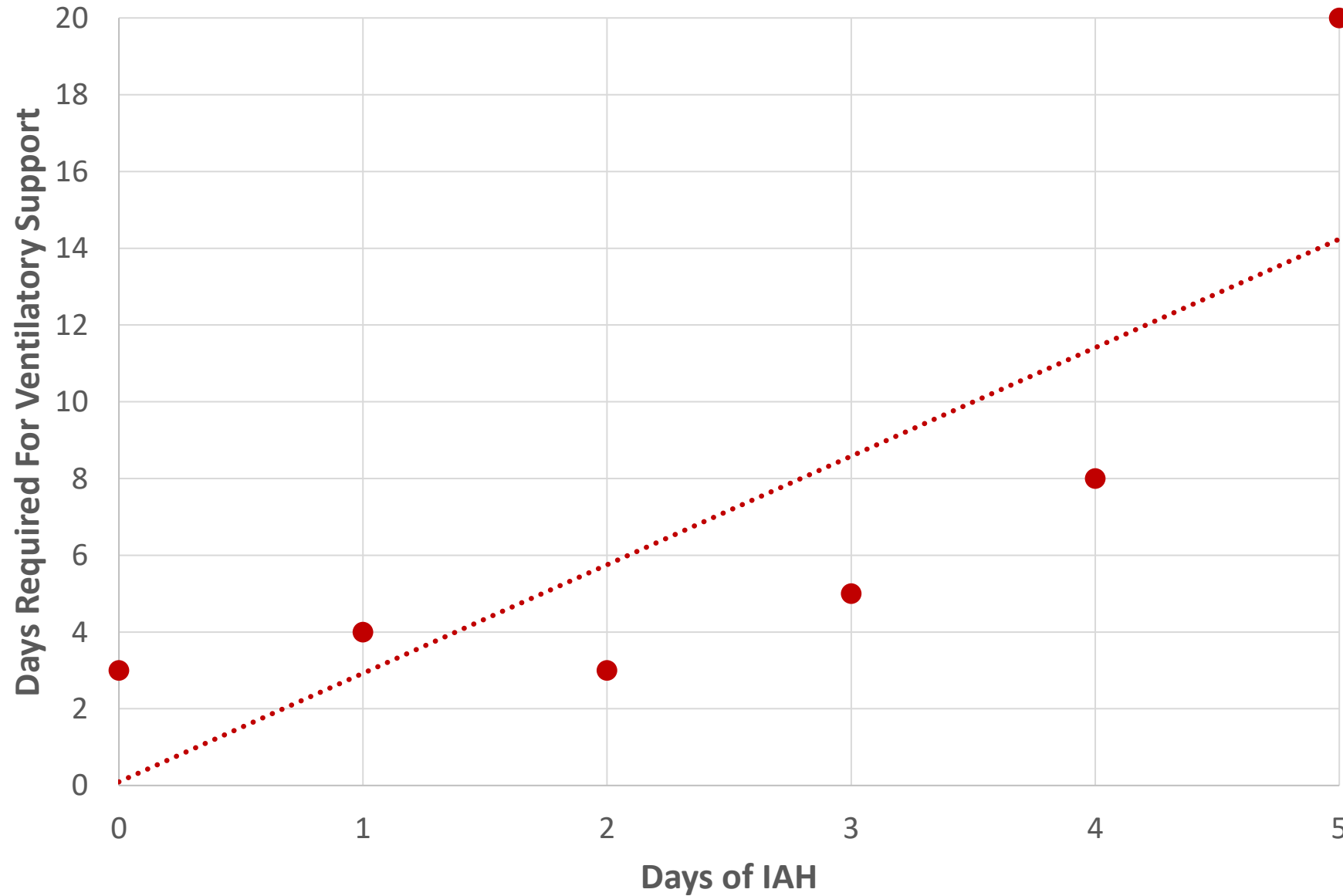


# Results: Total Days of Ventilation Post CDH Repair

Duration of Post CDH Repair Ventilation (Days)	Frequency, n	Percentage (%)
< 4	7	29.2
<b>4 - 7</b>	<b>10</b>	<b>41.7</b>
> 7	7	29.2
<b>Total</b>	<b>24</b>	<b>100</b>



# Results: IAH & Ventilatory Support Requirements

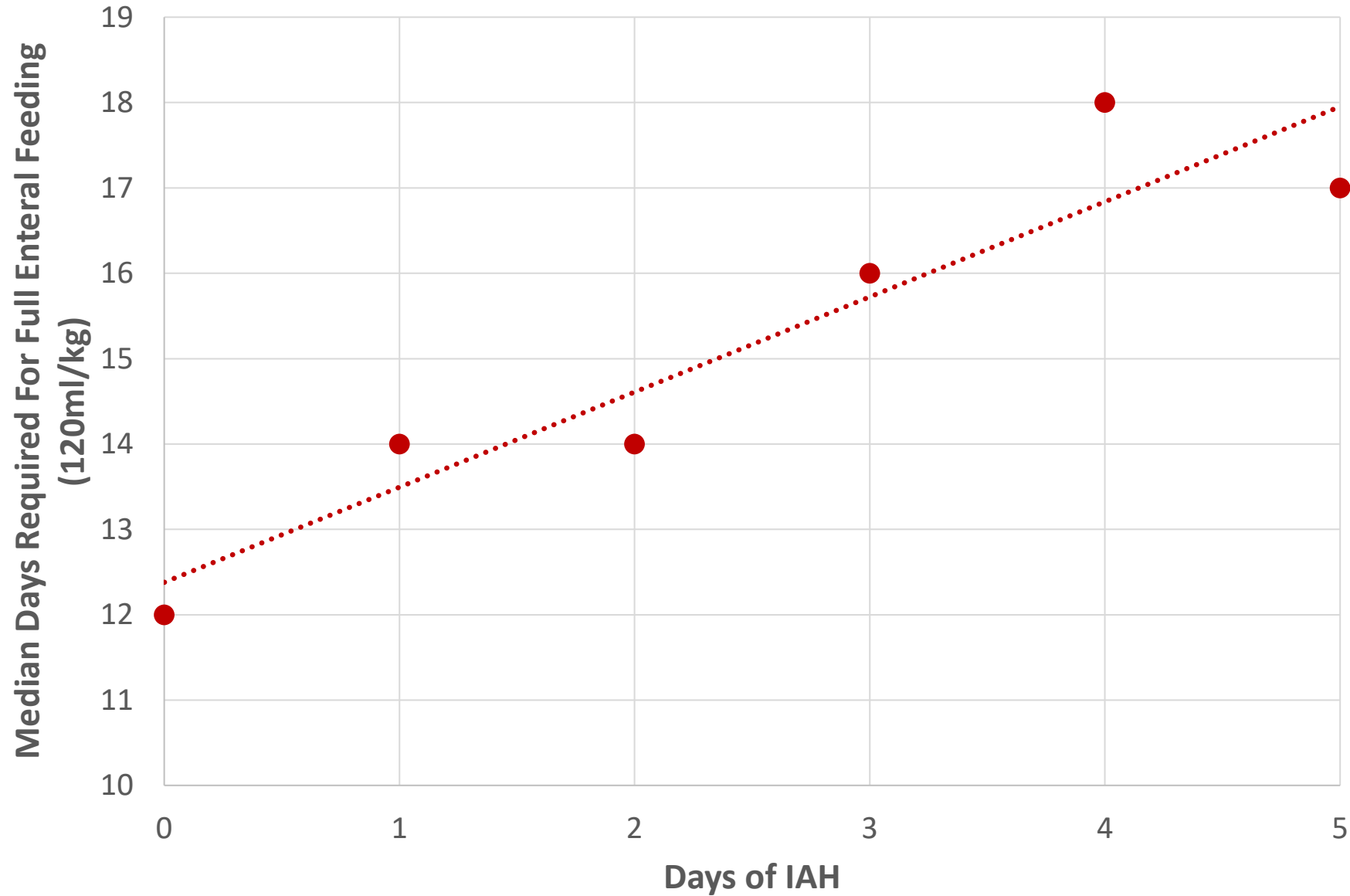


Spearman Correlation

$r = 0.704$

$p < 0.001$

# Results: IAH & Time Required for Feeding Establishment



Spearman Correlation

$r = 0.557$

$p = 0.005$

- Intra-abdominal pressure measurement is a **useful adjunct** in post **CDH repair monitoring** :
  - >To detect **intra-abdominal hypertension**.
  - >In predicting **ventilatory support requirements** and **time required for feeding establishment**.

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# THANK YOU