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Acute Kidney Injury in Overweight/Obese

Children with Dengue Hemorrhagic Fever

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Background:

Dengue hemorrhagic fever (DHF) is a severe and potentially life-threatening condition affecting children and young adults in endemic areas. Obesity is known to alter immune and inflammatory responses potentially worsening the clinical course of dengue infection.

This study aims to identify the prevalence and associated factors of acute kidney injury (AKI) in overweight/obese children with DHF

Methods:

Retrospective study



N=78

- Overweight/Obese Children 5–18 years old
- Diagnosed with DHF between 2013 and 2023 at Siriraj Hospital, Bangkok, Thailand

**AKI
n = 10**

**Non-AKI
n = 68**

Results:



87.2%
no-AKI

12.8% AKI
according to KDIGO 2012 criteria

- **Mean time of AKI = 2.6 days after fever onset**
- **Higher** white blood cell counts
- **Greater** frequency of Dengue shock syndrome (DHF grade 3 and 4)
- **More severe disease** is characterized by longer hospital stays, need for critical care, and increased mortality.

Conclusions:

AKI is a relatively common complication in overweight/obese children with DHF and is associated with more severe disease features and prolonged hospitalization. The lack of leukopenia and higher WBC counts may reflect a heightened inflammatory response contributing to kidney injury.

Early recognition and monitoring of renal function in this high-risk group are crucial for timely management and improving outcomes.

	Total=78	With AKI=10	No AKI=68	p-value
Age	12.0 (9.8-13.9)	12.0(9.8-13.9)	11.9 (9.0-13.5)	0.28
Male	54/78 (69.2%)	8/10(80.0%)	46/68 (67.6%)	0.43
BMI	29.2 (24.9-32.2)	28.8 (25.4-32.3)	29.2 (24.9-32.2)	0.81
BMI Z -score	3.7(3.1-4.3)	3.7(3.2-4.3)	3.7(2.9-4.4)	0.82
Hct at admission	41.4 ±4.5	39.6±1.5	41.7 ± 0.5	0.38
Peak Hct level	43.1% (40.0-45.8)	42.6% (41.3-50.5)	43.2% (39.6-45.6)	0.34
WBC count	3,325 (2,450-5597)	7,255 (3,552-10902)	3,215 (2,270-5332)	0.01
Platelet count at admission	98,000 (56,500-162,000)	162,000 (81,750-224,000)	97,000 (54,250-155,750)	0.11
Dengue shock syndrome (DHF grade III -IV)	8/78(10.3%)	3/10(30.0%)	5/68(7.4%)	0.03
Acute liver failure	2/78 (2.6%)	1/10(10.0%)	1/68 (1.5%)	0.11
Co-infection	15/78 (19.2%)	3/10 (30.0%)	12/68(18.9%)	0.62
Sepsis and DIC	2/78 (2.6%)	1/10(10.0%)	1/68 (1.5%)	0.11
Severe Hemorrhage	2/78 (2.6%)	1/10(10.0%)	1/68(1.5%)	0.26
Need for critical care	7/78 (9.0%)	3/10 (30.0%)	4/68 (5.9%)	0.01
Length of stay	3 (2-4)	4.5(3-10)	3 (2-4)	0.03
Death	1/78(1.3%)	1/10 (10.0%)	0/68	0.01