

**ACUTE ILLNESS PROTOCOL
FATTY ACID OXIDATION DISORDERS
MEDIUM CHAIN Acyl-CoA DEHYDROGENASE (MCAD) DEFICIENCY**

TREATMENT

1. INDICATION FOR IV (NEVER less than 10% dextrose IV infusion)
(One or more indication is sufficient for IV)

- Vomiting
- Hypoglycemia
- Poor PO intake
- Dehydration Do not rely on urinary ketones as indicating dehydration!
- Decreased alertness
- Metabolic Acidosis

Start 10% glucose continuous infusion at 1.5x maintenance, to provide 7-8mg/kg/min.

2. HYPOGLYCEMIA

push 25% dextrose 2ml/kg and follow with a continuous 10% dextrose infusion at 1.5x maintenance, to provide 7-8 mg/kg/min glucose.

3. METABOLIC ACIDOSIS (Bicarbonate level <16mEq/L)

must be treated aggressively with IV sodium bicarbonate (1mEq/kg). Treating conservatively in the expectation of a re-equilibration of acid/base balance as other biochemical /clinical parameters are normalized can lead to tragic consequences.

4. PRECIPITATING FACTORS

Should be treated aggressively to help minimize further catabolism

5. APPARENTLY WELL

If drinking oral fluids well, and none of the above factors present, there is no need for emergent IVI. But history of earlier vomiting, pyrexia, or other stressor should be taken seriously and a period of observation undertaken to ensure that PO fluids are taken frequently and well tolerated, with glucose status monitored periodically.

POST EMERGENCY MANAGEMENT

1. Child unable to take/maintain PO intake

- Start, or continue, 10% glucose continuous infusion at 1.5x maintenance.
- Blood glucose and acid/base status should be monitored regularly. If the child is physically stressed keep the blood sugar levels elevated (glucose levels should be kept between 120-170 mg/dl)

2. Carnitine

The use of carnitine in FAODs is controversial and there are concerns that excessive long chain acyl carnitines which may be produced may induce arrhythmias. Consult with the metabolic physician for guidance regarding this in each individual case.

3. **DO NOT ADMINISTER LIPIDS IN ANY FORM**

4. Other medications

Epinephrine may stimulate lipolysis, therefore if indicated in these children should be covered with 10% dextrose infusion. It is wise to check drug interaction and side effects such as hypoglycemia whenever prescribing for these children.

5. Avoidance of fasting when stop IVI

this may include complex carbohydrate in the form of cornstarch supplementation to get through the night as the child gets older and a high carbohydrate/low fat diet.

Any questions about the patient or this protocol, please call or have paged the Genetics/Metabolism Fellow-on-call or, failing this, the Metabolic attending on call at your hospital or nearest pediatric tertiary care center.

Additional information may be obtained via OMIM at
<http://www.ncbi.nlm.nih.gov/entrez/dispomim.cgi?id=201450>