Case Presentation

Fabry's Disease: A Case series report of a Libyan family

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Abstract:

Introduction Fabry’s disease (FD) is a rare disorders due to the very low residual function of alphagalactosidase enzyme causing chronic kidney disease (CKD), with the incidence of 1/40,000 males. Heterozygous females may be asymptomatic. We hereby report a patient having CKD and other clinical findings like, dermatological, neurological and cardiological manifestations and pedigree analysis were strongly suggest the diagnosis of Fabry Disease.

Case Presentation: A 40 year old man with high renal profile The patient is normotensive, non-diabetic, in 2013 had history of left ophthalmoloplagia which resulted from acute ischemia in midbrain, In 2014 had bilateral sensory neural hearing loss. In 2019 was noticed that he had a skin rash in a “bathing-trunk” distribution, they are small angiomas, by physical examination patient looks pale, he has mild pedal edema, CNS examination showed 7th, 8th and 9th cranial nerve palsy, his investigations showed raised s. creatinine 3.2 mg/dl, Urine protein++, eGFR 22.4/min/1.73m2. Ultrasound abdomen showed small kidneys and echocardiography showed LVH. A pedigree analysis showed recipient was third in birth order and has two brothers a known case of CKD on regular hemodialysis, The CKD of the brothers was a result of Fabry Disease, was evaluated for a-galactosidase activity which was found markedly decreased (12.10; normal enzyme activity level >60). According to clinical manifestations and strong family history of FD,

Conclusion & Recommendations: This case report highlights the importance of careful evaluation of cases of CKD due to unusual causes, particularly when there's positive family history, in order to avoid misdiagnosis and also for early and proper therapy.

Key words: Fabry’s Disease, a-galactosidase, chronic kidney disease, Enzyme Replacement Therapy.

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Introduction

Fabry’s disease (FD) is one of those rare disorders which are highly undiagnosed. The reported incidence of this disorder is 1/40,000 males.[1] FD being a rare cause of end-stage renal disease (ESRD), accounts for 0.0167% of all causes of ESRD.[2] Manifestations of FD are often more severe in men due to the very low residual function of alpha-galactosidase. Heterozygous females may be asymptomatic except for corneal opacities or depending on lyonization or random X-inactivation, they may be as severely affected as homozygous males.[3]

We hereby report a patient having CKD, and had other clinical findings such as dermatological, neurological and cardiological manifestations and pedigree analysis were strongly suggest the diagnosis of Fabry Disease.

This case report highlights the importance of careful evaluation of cases of CKD due to unusual causes, particularly when there’s positive family history, in order to avoid misdiagnosis and also for early and proper therapy.

Case Presentation:

A 40 year old man referred to our nephrology clinic with history of generalized fatigue associated with high renal profile. The patient historically normotensive, non-diabetic, but in 2013 had history of left ophthalmoplegia which resulted from acute ischemia in midbrain.

In 2014 started follow up at ENT clinic because he has bilateral sensory neural hearing loss. In 2019 it was noticed that he had a skin rash in a “bathing-trunk” distribution. They are small angiomas, probably angiokeratomas. fig 1.

On physical examination patient looks pale, he has mild bilateral mild pedal edema, vital signs within normal range, CNS examinations show 7th, 8th and 9th cranial nerve palsy.

Tab. 1 At this time his blood tests were as follows:-
Ultrasound examination of the abdominal cavity showed that the liver, biliary system, spleen, bladder and prostate appeared to be normal, with no ascites and nolymphadenopathy. His kidneys appeared to be somewhat small (with a bipolariameterof8.0cm)and in creaseinechogenisity. An electrocardiogram showed lateral T-wave inversion and left ventricular hypertrophy. and echocardiography showed LVH , moderate Aortic regurgitation with EF65%. A pedigree analysis showed recipient was third in birth order and has two brothers known history of ESKD on regular hemodialysis, the first one on hemodialysis since 2011 and the other since 2013. The ESKD of the brothers was a result of FabryDisease, was evaluated for alpha-galactosidase activity which was found markedly decreased (12.10; normal enzyme activity level >60), and was diagnosed as FD with renal failure. According to clinical manifestations and strong family history of FD we suggest the most likely cause of the CKD in this case is Fabry Disease and our planning is for biochemical investigation of aná-galactosidase -Aactivity. And ERT.

**Discussion**

Our case series is important because of following reasons FD is under-diagnosed and screening of high-risk groups is important for case finding and (2) this case report highlights the importance of screening those patients for CKD who have unexplained renal failure. Fabry nephropathy is one of the most severe manifestations of FD. It had been one of the unknown causes of morbidity and

<table>
<thead>
<tr>
<th><strong>Sodium</strong></th>
<th>135mmol/L</th>
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<tr>
<td><strong>Potassium</strong></td>
<td>4mmol/L</td>
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<tr>
<td><strong>Bicarbonate</strong></td>
<td>16mmol/L</td>
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<tr>
<td><strong>Urea</strong></td>
<td>80mg/dl</td>
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<tr>
<td><strong>Creatinine</strong></td>
<td>3.2mg/dl</td>
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<tr>
<td><strong>Urineprotein</strong></td>
<td>++</td>
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<tr>
<td><strong>Haemoglobin</strong></td>
<td>10g/dl</td>
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<tr>
<td><strong>Normalwhitebloodcells</strong></td>
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<tr>
<td><strong>PTH</strong></td>
<td>94pg/ml</td>
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<tr>
<td><strong>HBA1C</strong></td>
<td>5.8%</td>
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<tr>
<td><strong>eGFR</strong></td>
<td>22.4/min/1.73m2</td>
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mortality before the widespread availability of dialysis and kidney transplantation. Like most aspects of FD, kidney disease is thought to result from GL-3 accumulation in glomerular endothelial, mesangial and interstitial cells, podocytes, and renal vasculature. Progressive intracellular accumulation of GL-3 is thought to cause glomerulosclerosis and interstitial fibrosis[8] as well as its urinary excretion together with other lipids.[9] Diagnosis may be presumptive based on observation of symptoms and laboratory findings with family history and medical pedigree. Definitive diagnosis is made by enzyme assay and genemutationanalysis or linkage analysis.

**Conclusion**

Fabry’s disease being a rare cause of chronic kidney disease, more severe in men due to the very low residual function of alphagalactosidase. CKD, dermatological, neurological, cardiological manifestations and pedigree analysis strongly suggest the diagnosis of Fabry Disease.

**References:**

Transplantation. 2000;69:2337–9.[PubMed][GoogleScholar]


