Abstract
Insulin resistance is impaired ability of plasma insulin to perform its actions at usual concentrations. It can be acquired or genetic. Here we report a case of insulin resistance.

Key words: insulin resistance syndromes, acanthosis nigricans

Introduction
Insulin resistance is defined as an impaired ability of plasma insulin at usual concentrations to adequately promote peripheral glucose disposal, suppress hepatic glucose, and inhibit very low density lipoprotein (VLDL) output. It can be acquired or genetic. Insulin resistance is associated with many cutaneous and systemic manifestations. Here we report a case of insulin resistance.

Case Report
A 12 year old male boy born of non consanguineous marriage presented to our OPD with hypertrichosis and severe acanthosis nigricans. On examination, there was abnormal facies with low frontal hair line, large ears with hypertrichosis, large lips, prognathism, hypertelorism. There was severe acanthosis nigricans involving the neck, axillae and flexures with blackening and thickening of skin over trunk. There was generalized hypertrichosis (fig 1-4). Oral mucosa, nails and teeth were normal.

Discussion
The pathogenesis of insulin resistance is multifactorial. Thus, several molecular pathways in energy homeostasis, lipid metabolism, insulin receptor signaling pathway, cytokines, hormone-binding proteins including those that are serine protease inhibitors (SERPINS), and other protease regulators are responsible for the development of IR, obesity, or lipodystrophy. On review of literature the above patient seemed to be affected by defect in the insulin-signaling pathway, which may cause mutations in insulin receptors, development of insulin receptor autoantibodies or defects in plasma cell membrane glycoprotein-1 and glucose transporter 4 (GLUT4) molecules are reported. The syndromes reported with this pathway defect are Type A syndrome, Donohue syndrome.
The features present in this patient suggestive of insulin resistance were acanthosis nigricans, hypertrichosis, hypertelorism, large ears, prominent lips, prognathism, steatohepatitis and bilateral bright kidneys which might be due to glomerulonephritis. The patient also had very high fasting insulin although his blood sugar was normal.

In children, insulin resistance is usually well compensated by hyperinsulinemia. However it increases risk for fatty liver, atherosclerosis and increased cancer risk. Thus an early intervention is necessary. This involves regular exercise, restricted calorie, carbohydrate and triglyceride dietary intake. Fibrates may be required, especially when TG levels exceed 500 mg/dl, at which point acute pancreatitis and gall bladder disease become real risks. Metformin can also be used for prophylaxis. Laparoscopic surgery can be used in obese cases.

References