Open IK_{ATP} channels cause membrane hyperpolarization that keeps voltage-gated calcium channels closed, and prevents insulin release. Sulfonylureas bind to the SUR1 regulatory subunit of IK_{ATP} channels and could, therefore, close mutated IK_{ATP} channels through a non-ATP-dependent route.

Pearson *et al*. found that 44 of 49 consecutive diabetic patients with Kir6.2 mutations could discontinue insulin injections after initiating an oral sulfonylurea. Glycemic control improved in all patients tested, with near-normalization of glycated hemoglobin levels and minimal hypoglycemia. Despite use of high sulfonylurea doses, the only adverse effect reported was transient diarrhea. Good control was maintained in all 12 patients who were treated for >12 months, despite reductions in sulphonylurea dose. Interestingly, physiological studies in patients on sulfonylureas suggested a key role for incretins in maintaining good glycemic control. Compared with patients who successfully switched to sulfonylureas, those who remained insulin-dependent were more likely to have neurological disease and mutated IK_{ATP} channels that did not respond *in vitro* to sulphonylureas.

The authors recommend that genetic testing for *KCNJ11* mutations should be undertaken in all patients diagnosed with diabetes aged <6 months—the 30–58% of such patients who have *KCNJ11* mutations should be transferred to sulfonylurea therapy.

Original article Pearson ER *et al.* (2006) Switching from insulin to oral sulfonylureas in patients with diabetes due to Kir6.2 mutations. *N Engl J Med* **355:** 467–477

Screening for congenital hypothyroidism with the Dutch T_4–TSH–TBG system

Children with untreated congenital hypothyroidism can experience impaired cognitive and motor development. In the Netherlands, neonates are screened by measurement of endogenous T_4 levels; additionally, TSH levels are measured if T_4 levels are marginally low, and both TSH and thyroxine-binding globulin (TBG) levels are measured if T_4 levels are definitely low. Patients with T_4–TSH–TBG results indicative of congenital hypothyroidism are referred to a pediatrician, and those with equivocal results are offered a repeat test before referral. Kempers *et al*. report that this screening program detects even mild or transient congenital hypothyroidism, of central or thyroidal origin; they suggest that the efficacy of T_4–TSH–TBG screening accounts for the very high incidence of congenital hypothyroidism in the Netherlands, compared with similarly developed, iodine-replete countries.

During 2002–2004, 99.7% of children born in the Netherlands underwent neonatal T_4–TSH–TBG screening. Of 772 children referred for abnormal or equivocal T_4–TSH–TBG results, 224 were diagnosed with congenital hypothyroidism. A further 13 cases were not detected by screening (3 were diagnosed before screening; of the 10 false-negative results, 4 were preterm babies screened only with TSH). The authors estimate that TSH-only screening would have missed 47 cases of congenital hypothyroidism.

Most referred children without congenital hypothyroidism were severely TBG-deficient, or were very ill patients in intensive care; Kempers *et al*. note that it remains unclear whether their altered thyroid state carried a risk of brain damage that could be alleviated by temporary T_4 supplementation.

Original article Kempers MJ *et al.* (2006) Neonatal screening for congenital hypothyroidism based on thyroxine, thyrotropin, and thyroxine-binding globulin measurement: potentials and pitfalls. *J Clin Endocrinol Metab* **91:** 3370–3376

Ultrasonography and scintigraphy in the diagnosis of primary hyperparathyroidism

Primary hyperparathyroidism is predominantly treated by surgical excision of the enlarged parathyroid gland. It has been suggested that the use of preoperative imaging, to localize abnormal glands, increases the safety and efficacy of surgery. This study from India compared the sensitivity and predictive value of two widely used parathyroid imaging techniques—high-resolution ultrasonography and radionuclide scintigraphy.

In total, 46 patients with suspected primary hyperparathyroidism underwent ultrasonography of the anterior neck as well as scintigraphy using ^{99m}Tc sestamibi and/or ^{99m}Tc pertechnate plus ^{201}Tl. All patients subsequently underwent conventional bilateral neck exploration that revealed a single adenoma in 41 patients, multigland

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