Method: In 10 schizophrenic patients (7 woman, 3 man, age +/-SD: 34 +/-7 PANSS: 72 +/- 20) IBZM SPECT (185 MBq, acquisition was started 90 min p.i.) were performed during introduction of quetiapine therapy (600-800 mg/day) and during a lower preservation dose (200-400 mg/day). All the patients were under quetiapine monotherapy. Simultaneously to the SPECT investigations visual contrast standardised rating scales determined sensitivity, clinical symptoms and exrapyramidal signs. For the evaluation of SPECT images visual interpretation and striatum/occipital lobe (S/O) activity ratio was calculated.
Results: The striatum/occipital lobe ratio at the first investigation was 1.7 +/- 0.23 at the second 1.68 +/- 0.12. The receptor occupancy was individually different but no significant difference was observed in relation to the quetiapine dose used. There was no sinificant difference in PANNSS and no patients had extrapyramidal signs. In 5 patients in clinical steady state decreasing the dose of quetiapine the S/O ratio increased by 1-35 % without long term relapse but in 5 with decreasing S/O ratio (9-29%) clinical relapse of the disease were observed. The IBZM uptake changes correlated with the time interval until the relapse, but not with the PANNS changes. The initial striatum/occipital ratio was also significantly higher in the group of patients with relapse (over 1.8) compared to the other group. There were no relationship between the initial D2 receptor occupancy and the PANNS changes and the interval until the relapse. Endogen dopamin release, transporter changes and the role of other receptors might be responsible for these findings.
Conclusion: In Quetiapine treated schizophrenic patients the initial D2 receptor occupancy and the changes related to the dose of the drug has a prognostic value.

11.6

Sincalide – the Final Protocol

E.A. Clarke, A. Notghi, S.R. Hesslewood and L.K. Harding

Department of Physics and Nuclear Medicine, City Hospital NHS Trust, Birmingham, UK

Aim: HIDA Biliary studies examine the gallbladder (GB) to give a percentage ejection fraction (EF). Porcine CCK was an accepted agent for stimulating the GB prior to being withdrawn in the UK from 1998. Sincalide (a synthetic CCK) was the suggested replacement. We have tried many administration regimes in an attempt to get results comparable with our established CCK protocols.
Methods: Dose concentration and length of infusion times have been studied. Initially a dose of 10ngm/kg/min given over 2 minutes (manufacturer's recommended dose) was used. This gave falsely low ejection fractions. The dose was reduced to 3ngm/kg/min over 3 minutes as it was felt the higher dose may be causing constriction of the Sphincter Of Oddi. This gave a slight improvement with 22% of patients having normal EF (>35%) (1).
The length of infusion was extended to 15 minutes and the dose concentration reduced again to 0.6ngm/kg/min. 62% of patients had a normal EF (2). However, on many of the curves the gallbladder was still contracting on completion of the 15-minute infusion and began to refill immediately after stopping Sincalide. A further change of protocol was indicated.
The infusion time was extended to 30 minutes and the dose concentration per minute kept the same. Imaging began at 30 minutes post HIDA injection and continued for a total of 50 minutes. Sincalide infusion began at 35 minutes if a GB was visualised.
Results: This protocol has been performed on 17 patients. 53% of these had a normal result (comparable with a normal rate of 40% previously established with CCK) with a mean EF of

60%. The mean EF of patients with abnormal studies was 15%. Curves showed a plateau by 30 minutes in 94% of patients indicating that gallbladder contraction was complete.
No normal range is available so results were compared with ultrasound (US).

	Normal EF	Abnormal EF
Normal US	9	3
Abnormal US	0	5

All patients who had an abnormal US scan also had abnormal HIDA results. Three patients had a normal US scan and abnormal HIDA study. These are currently undergoing further investigations.
Conclusion: We conclude that 0.6ngm/kg/minute Sincalide infused over 30 minutes is a satisfactory replacement for CCK and is the protocol we recommend for HIDA studies.
(1) EJNM;27:S98 (2000)
(2) NMC;22:447 (2001)

11.7

Utility of the Whole-Kidney and Parenchymal Time-Activity Curves for a Prediction of Diuretic Response

M. Šámal [1], H. Bergmann [2,3], C. C. Nimmon [4], A. Mostbeck [2], A. Staudenherz [5], R. Dudczak [2,5]

[1]Charles Univ. Prague, Czech Rep.; [2]L. Boltzmann Inst. Nucl. Med., Vienna, Austria; [3]Dep. Biomed. Eng. Phys., AKH, Vienna, Austria; [4]Chiang Mai, Thailand; [5]Dep. Nucl. Med., AKH, Vienna, Austria

Aim: In a retrospective study, MAG3 dynamic renal data (90 kidneys in 57 children) have been analyzed with the aim to test a prediction of diuretic response. **Methods:** Whole-kidney (WK) and parenchymal (PA) curves were extracted from 20 min pre-diuretic phase using standard and fuzzy ROIs. Peak time (PT), half time (HT), ratio of the curve value in 20th min to the curve maximum (RM), mean transit time (TT), and ouput efficiency (OE) were calculated for each curve. With PA curves, also the transit time index (PI) was calculated. The curve parameters were compared with the maximum elimination rate of urine after diuretic (EM) using paired correlations and Fisher's linear discriminant function. **Results:** The highest correlation was found between ln EM and OE-PA (0.61), RM-PA (-0.58), TT-PA (-0.57), and PI (-0.57). Best diagnostic accuracy in prediction of EM $\leq$ 7 % (a sign of obstruction) was obtained with OE-PA (87 %), PI (87 %), and both PT-PA and RM-PA (83 %). Parameters of WK curves had higher sensitivity, those of PA curves higher specificity. Most parameters had a high predictive value of negative result (NPV > 90 %) but low predictive value of positive result (PPV < 50 %). Best discrimination of low EM was obtained with a combination of both WK and PA parameters (diagnostic accuracy of 90 %). Using PA curves in kidneys with late PT-WK made possible to increase the diagnostic accuracy from 70 - 80 % (with WK parameters only) to 95 %. **Conclusions:** Our results demonstrate that PA curves carry additional clinical information and may help to predict and interpret a diuretic response especially in kidneys with late peak of the WK curves.