kidney transplantation. One of these is corticosteroid-induced osteoporosis, resulting in fractures. Retrospectively we determined the fracture incidence in our patients as follows: all patients with good graft function transplanted before January 1st, 1988, were sent a questionnaire and their medical records were studied. We asked for the occurrence of fracture after transplantation, the existence of osteoporosis and a possible therapeutic approach for osteoporosis. A total of 292 patients were identified (165 men, 127 women). The mean age at transplantation for men was 35 years (range 4 to 69 years) and for women 36 years (range 5 to 61). Two hundred and sixteen questionnaires (74%) were returned, 284 medical records were reviewed (98%). In this way we obtained data on 290 of 292 patients. The mean duration of follow-up for men was 13 years (range 8 to 27 years) and for women 14 years (range 8 to 25 years). Sixty-eight fractures occurred in 43 patients (17 men, 26 women); in most of the cases there was only a minor or no trauma. Fractures were situated in leg/ankle/foot (25X in 20 patients), arm/wrist/hand (23X in 16 patients), ribs (6X in 6 patients), pelvis (2X in 2 patients), vertebral (10 patients), sternum (1X) and clavicle (1X). In half of the cases, the first fracture occurred within 5 years after transplantation. Fractures occurred significantly more often in women (P < 0.02). The time on dialysis before, and the cumulative dose of corticosteroids in the first 3 months after transplantation did not differ between men or women with or without a fracture. Women with one or more fractures were transplanted at a significant older age (42 vs. 35 years, P < 0.05) and were significantly older at the moment of follow-up than women without fractures (55 vs. 48 years; P < 0.05); the duration of follow-up was 14 years in both groups. Fractures were confirmed radiologically or ultrasonographically on the basis of the radiographs. In 9 of these 19 patients densitometry was performed; 8 of them indeed had osteoporosis and were intermittently treated for osteoporosis. In the whole group of 292 patients, 28 were treated for osteoporosis; 14 of them had fraxtures before this treatment. Our conclusions are: 15% of our patients experienced one or more fractures after kidney transplantation and there is an apparent correlation with osteoporosis.

Prediction of overhydration in hemodialysis (HD) patients by measuring blood pressure response to Valsalva maneuver. D.J.W. van KraaIj, I.H. Go, M.M.J. Schuursmans, R.W.M.M. Jansen, W.H.L. Hoefnagels, Department of Internal Medicine, Canisius-Wilhelmina Hospital and Department of Geriatric Medicine, University Hospital Nijmegen, Nijmegen, The Netherlands. Distinct correlations between the systolic blood pressure ratio during non-invasive and invasive Valsalva maneuvers have been demonstrated previously. We performed non-invasive blood pressure measurements (Finapres5000) during Valsalva maneuvers in 15 patients on chronic HD, and compared the use of this procedure in identifying overhydrated HD patients with four other methods. During the five-week study period, 5 patients experienced an episode of overhydration, necessitating medical intervention. Compared are predictive means of predicting overhydration periods in 5 overhydrated patients (1), and of 5 overhydrated patients vs. 10 controls (II).

Fracture incidence after kidney transplantation. R. de Sévans, J. Wetzel and A. Hoitsma, Department of Nephrology, University Hospital, Nijmegen, The Netherlands. Several long-term complications occur after successful kidney transplantation. One of these is corticosteroid-induced osteoporosis, resulting in fractures. Retrospectively we determined the fracture incidence in our patients as follows: all patients with good graft function transplanted before January 1st, 1988, were sent a questionnaire and their medical records were studied. We asked for the occurrence of fracture after transplantation, the existence of osteoporosis and a possible therapeutic approach for osteoporosis. A total of 292 patients were identified (165 men, 127 women). The mean age at transplantation for men was 35 years (range 4 to 69 years) and for women 36 years (range 5 to 61). Two hundred and sixteen questionnaires (74%) were returned, 284 medical records were reviewed (98%). In this way we obtained data on 290 of 292 patients. The mean duration of follow-up for men was 13 years (range 8 to 27 years) and for women 14 years (range 8 to 25 years). Sixty-eight fractures occurred in 43 patients (17 men, 26 women); in most of the cases there was only a minor or no trauma. Fractures were situated in leg/ankle/foot (25X in 20 patients), arm/wrist/hand (23X in 16 patients), ribs (6X in 6 patients), pelvis (2X in 2 patients), vertebral (10 patients), sternum (1X) and clavicle (1X). In half of the cases, the first fracture occurred within 5 years after transplantation. Fractures occurred significantly more often in women (P < 0.02). The time on dialysis before, and the cumulative dose of corticosteroids in the first 3 months after transplantation did not differ between men or women with or without a fracture. Women with one or more fractures were transplanted at a significant older age (42 vs. 35 years, P < 0.05) and were significantly older at the moment of follow-up than women without fractures (55 vs. 48 years; P < 0.05); the duration of follow-up was 14 years in both groups. Fractures were confirmed radiologically or ultrasonographically on the basis of the radiographs. In 9 of these 19 patients densitometry was performed; 8 of them indeed had osteoporosis and were intermittently treated for osteoporosis. In the whole group of 292 patients, 28 were treated for osteoporosis; 14 of them had fractures before this treatment. Our conclusions are: 15% of our patients experienced one or more fractures after kidney transplantation and there is an apparent correlation with osteoporosis.

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