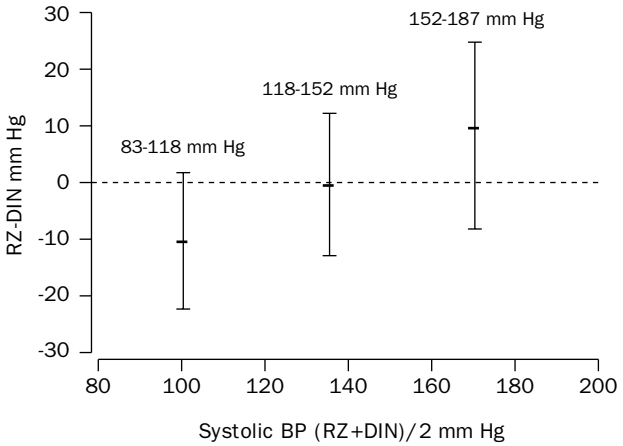

Limits of agreement (mean [2 SD]) between random-zero sphygmomanometer and Dinamap for tertile of systolic BP distribution

clinical practice.[3] We compared RZ with Dinamap 8100 Critikon (DIN) in 52 adults with non-insulin-dependent diabetes mellitus, mean age 56 (range 38–75) years of whom 30 had microalbuminuria and 23 had hypertension.

After 10 minutes' rest we determined sitting right arm BP three times with each device in random order. The width of the cuff was the same in the two devices. 10 minutes elapsed between using each device and 2 minutes between each measurement. With RZ, first and fifth Korotkoff sounds (nearest 2 mm Hg) were taken as systolic BP and diastolic BP, respectively. The observer and the equipment used were the same throughout the study period.

There was a close correlation between the two methods (r=0·94 systolic BP, r=0·84 diastolic BP). To further assess DIN accuracy, a measure of agreement was obtained by plotting the difference between the methods against their mean.[4] The mean (SD) of the means of differences between RZ and DIN for systolic BP was −2·18 (8·87) and for diastolic BP +4·48 (6·01) mm Hg. The limit of agreement (mean [2 SD]) for systolic BP measurement ranged from +15·56 to −19·91 mm Hg and for diastolic BP from +16·5 to −7·54 mm Hg. From these data we estimated that for 95% of subjects the DIN measurement of systolic BP and of diastolic BP will be between 16 mm Hg below and 20 mm Hg above and 16 mm Hg below and 8 mm Hg above the RZ measurement, respectively. Whereas these mean differences were constant over the whole range of pressures for diastolic BP the same was not true for systolic BP. When the distribution of systolic BP values was divided in tertiles it became apparent that DIN was significantly overestimating systolic BP for values below 118 mm Hg and underestimating for values greater than 152 mm Hg ($p<0·0001$ by ANOVA) (see figure). The values from the first to third measurement of both systolic BP and diastolic BP decreased with either device but similarly and not significantly.

In conclusion, although for both systolic and diastolic BP there is a close correlation between the two methods, the degree of agreement as indicated by the Bland and Altman analysis is not ideal. Dinamap could considerably overestimate or underestimate systolic and underestimate diastolic BP compared with the random-zero sphygmomanometer. Moreover for systolic BP the direction of the difference between the two methods changed for different levels of pressures. On the other hand the repeat of the two methods is close to the ideal. Thus when assessing BP in adult diabetic patients, Dinamap and the random-zero sphygmomanometer cannot be used interchangeably in clinical practice and one has to be circumspect on the definition of hypertension when using semi-automatic devices.

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3 Park MK, Menard SM. Accuracy of blood pressure measurement by the Dinamap monitor in infants and children. *Pediatrics* 1987; **79:** 907–14.
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Unit for Metabolic Medicine, UMDS, Guy's Hospital, London SE1 9RT, UK (A E Raptis)

Effects of riluzole on symptom progression in amyotrophic lateral sclerosis

P Sojka, P M Andersen, L Forsgren

Amyotrophic lateral sclerosis (ALS) is a neurodegenerative disease characterised by progressive motor neuron destruction. There is no effective cure and patients affected usually die of respiratory failure 2–4 years after onset of disease. Results of treatment trials (eg, ref 1) indicate that riluzole, a neuroprotective agent which presynaptically inhibits glutamate release, may improve survival as well as tracheostomy-free survival of ALS patients. We monitored changes in the deterioration rate of several functions by repeated quantitative laboratory tests in patients with ALS to detect whether riluzole affects symptom progression.

All five patients investigated (4 men and 1 woman with definite ALS with limb onset; age 54·8 [SD 9·0] years) were given 50 mg riluzole twice daily orally. Two patients (brothers) were homozygous for the Asp90Ala mutation (D90A) in the CuZn-superoxide dismutase gene (SOD)[2] and one patient exhibited a KSP aminoacid deletion in the repetitive region of the neurofilament heavy-chain gene. The patients were examined by two experienced nurses at 4–6 week intervals (at least five times before and at least four times after the start of treatment) with the TQNE protocol[3] comprising 28 different variables of respiratory, bulbar, and timed hand function, arm-muscle strength, and leg-muscle strength. The raw data were transformed by Z-scores.[3] Pradas et al[4] found that about 6-monthly TQNE observations are sufficient to obtain an adequate assessment of disease progression rate for a patient (ie, the slope of a linear regression line for Z-score of different functions). The slopes of the linear regression curves for different functions

Patient	Genetic defect	$K_{pre}>K_{per}$	$K_{pre}<K_{per}$	p	No of factors
M66	SOD (D90A)	20 (0)	8 (0)	0·12	28
M51	SOD (D90A)	16 (3)	12 (1)	0·13	28
M53	Neurofilament	14 (4)	12 (3)	0·51	26
F43	None	23 (6)	5 (0)	0·00038	28
M61	None	7 (2)	12 (2)	0·12	19

Slopes (K) of linear regression lines of Z-score values obtained before treatment (K_{pre}) and during treatment (K_{per})
Figures within parentheses give number of factors for which comparison of each pair of pre-treatment to per-treatment slopes revealed a statistically significant difference (piecewise linear regression model; p<0·05). M=male; F=female; figure gives the patients' ages. P value for comparison of whole sample of the pre-treatment slopes to per-treatment slopes (Wilcoxon signed-rank test). No=number of factors for which a comparison between pre-treatment and per-treatment values could be made.

may thus be taken as descriptions of the natural course of the disease for the patient and serve as a basis for assessment of, for example, drug effects.[4] For all five patients the linear regression coefficients (ie, the slopes) were calculated for the *Z*-scores of the different variables before introduction of the drug and during drug administration. The results are summarised in the table.

The natural course of the symptom deterioration in ALS patients, as described by repeated measures expressed by *Z*-score according to the TQNE protocol, has been found to be linear.[4] If this is the case, then the findings of our study indicate that the natural course of ALS was significantly altered for four of five patients when riluzole was administered. Moreover, there was a range of responses to treatment among our patients: no changes (M66), concomitant decrease and increase of deterioration rate of different functions observed in the same patients (M51, M53, and M61), and acceleration of symptom progression with respect to several functions in one patient (F43).

We suggest that ALS patients do not constitute a homogenous group with respect to efficacy of riluzole treatment. Furthermore, we propose that ALS patients should be subjected to careful quantitative evaluations of disease progression before and during treatment by riluzole (and other drugs), in order to monitor and detect significant changes in symptom progression rate. Whether negative changes may in some patients be attributed to riluzole (or other factors) and whether, on the other hand, there exist subgroups of ALS patients especially suited to riluzole treatment, must be settled in further studies.

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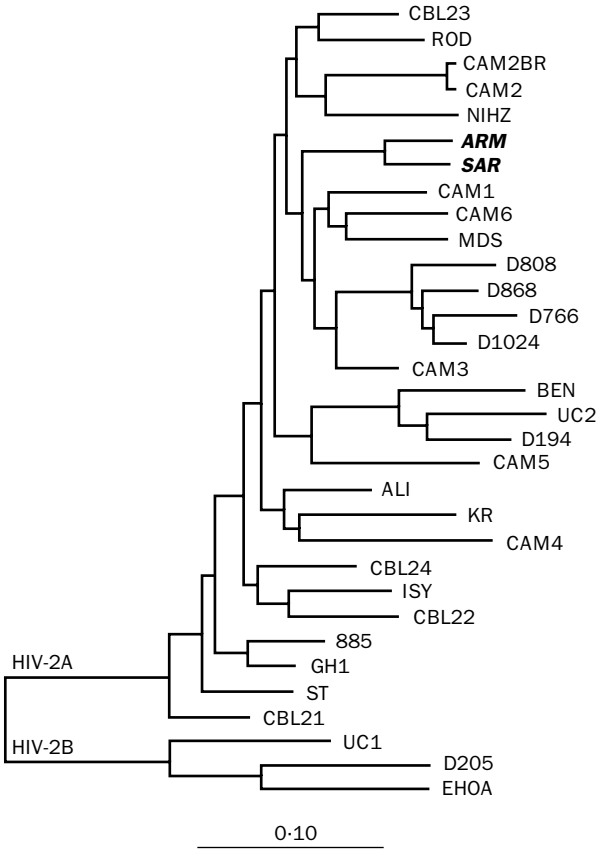
Neurocenter and Department of Clinical Physiology, University Hospital of Northern Sweden, Umeå University, S-901 85 Umeå, Sweden
(P Sojka)

Vertical transmission of HIV-2

Patricia Cavaco-Silva, Nuno C Taveira, M H Lourenço, M O Santos Ferreira, Rod S Daniels

Early epidemiological studies on vertical transmission of HIV-2 indicated that it might not occur;[1] although more recent data suggest it may be extremely uncommon.[2,3] As part of a cohort study at Lisbon's Paediatric Hospital, involving HIV-2 seropositive mothers and their children, we have enrolled to date 47 children. There was only one case of transmission.

The mother (ARM) was diagnosed as having HIV-2 infection during pregnancy and remained without symptoms throughout. A girl (SAR) was born by vaginal delivery and was bottle-fed. When she was 3 months old, she had *Pneumocystis carinii* pneumonia and HIV encephalopathy. AIDS was diagnosed and zidovudine was started. CD4 count was 860×10^6/L and CD8 count was 470×10^6/L. Virus isolation was attempted from whole blood collected on the 27th day after delivery from mother and child. For the child, samples were also obtained on the 5th, 8th, and 12th month. Virus isolation in all samples confirmed HIV-2 infection in mother and child. Both isolates, HIV-2 ARM and HIV-2 SAR, were phenotypically characterised. We infected peripheral-blood mononuclear cells (PBMC), peripheral-blood lymphocytes (PBL), monocyte-derived macrophages (MDM), and cell lines Jurkat-*tat*, SupT1, HUT78, CEM, and U937.



Phylogenetic tree of the evolutionary relations of HIV-2 ARM and HIV-2 SAR to each other and to other HIV-2 sequences
The highest likelihood tree is shown for a 1025 nucleotide alignment of HIV-2 *env*-gene sequences which encode regions spanning V2 to the carboxyterminus of gp125. The horizontal scale bar represents 10 substitutions per 100 nucleotides.

HIV-2 ARM only replicated in PBMC, PBL, and Jurkat-*tat*, causing a few small syncytia in blood cells. HIV-2 SAR replicated in PBMC, PBL, Jurkat-*tat*, and SupT1, causing small syncytia in blood cells and an extensive cytopathic effect in Jurkat-*tat*. These results suggest that the mother's virus is closer to the non syncytial-inducing (NSI) type of virus and the child's to the syncytia-inducing (SI) type. To analyse the size and antigenic profile of viral proteins, radio immunoprecipitation (RIP-PAGE) assays were done; HIV-2 ARM and HIV-2 SAR proteins reacted with HIV-2 serum, showing that their molecular weights were similar to each other and to those of the prototype virus HIV-2 ROD.

DNA was obtained from PBMC cultures and nested PCR was used to amplify a sub genomic *env* region of approximately 1150 bp, comprising most of the gp125 coding domain. These DNA fragments were cloned and sequenced to show that both viruses are closely related with an overall nucleotide diversity of 7·6%. Phylogenetic trees, based on nucleotide alignments (figure), show the two isolates within the subtype A branch, being more closely related to each other than to any HIV-2 isolate described to date. Our results offer proof that HIV-2 vertical transmission occurs.