

## COST EFFECTIVE 'PLANNING' IN THE USE OF INTRAVENOUS (IV) CYCLOSPORIN

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The immunosuppressive drug cyclosporin (Cyc A) continues to be listed as the largest single item of pharmacy expenditure for Queen Mary Hospital (QMH) and the Hong Kong Hospital Authority (HKHA). For most transplant patients, it is used intravenously to start with until they are able to take it orally. Some transplant patients only require a small fraction of the 250 mg dose in each ampoule. However, HKHA Guidelines state that "ampoules must not be shared" and according to past practice, the contents remaining in each ampoule after each dose was discarded.<sup>1,2</sup> In the absence of a *Central Sterile Unit-dosing Service*, the Clinical Pharmacology Division and the Bone Marrow Transplant Centre (BMTC) staff of the Department of Medicine of the University of Hong Kong have collaborated in relation to this problem. Every day, a specific nurse was assigned to prepare the IV cyclosporin dosing of all BMTC inpatients. All ampoules dispensed and their serial numbers, as well as corresponding doses administered to each patient were logged. All doses were prepared from single ampoules (i.e. combining contents of two or more ampoules was prohibited), and all the manufacturer's storage Instructions were followed. Records for the 2 year period from April 96 to March 98 are shown in the table:

	No of Cyc A doses	Cost Estimate of corresponding no of ampoules (HK\$)	Patient days with Cyc A treatment	Cost Estimate of corresponding no of ampoules (HK\$)	Actual No of ampoules used	Corresponding costs (HK\$)
1996 - 97	2,230	530,963	987	235,005	432	102,859
1997 - 98	3,087	735,015	1,471	350,245	606	144,289

Without sacrificing quality of care, the estimated saving of \$1.02 million for the acquisition costs of IV Cyc A were noted because details of actual dosing practice were logged. Other savings resulted from nursing process time in preparing intravenous infusion and sterile equipment used. HKHA Guidelines on Drug Usage should take account of different patient and drug categories, for which drug dosing practices similar to those described here, could be introduced.

1. Kou M et al HK Pract 1997; 19(2) Suppl:38.070, 2. Kumana CR et al 60th Anniversary of QMH Scientific Program 1997

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### Determination of body composition in Chinese females: a comparison of dual-energy X-ray absorptiometry (DXA) and total body water method (TBW)

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The estimations of body composition provide valuable information in a variety of clinical and research setting. Traditionally, body weight is subdivided into two compartments, fat mass (FM) and fat-free mass (FFM). Numerous methods are available for the estimation of FM vs. FFM. Dual-energy X-ray absorptiometry (DXA) represents one of the latest technology for body composition estimation with high precision (Fuller *et al.*, 1992). The technique is independent of body stature, age and sex. DXA have been increasingly used to assess body composition because of the increasing availability of the equipment and its ease of performance. Although investigations have been done to examine the accuracy of DXA in the assessment of body composition, most of them were conducted in Caucasians with relatively few information in other populations. The accuracy of this technique used in Chinese remains unknown. The objective of this study is to compare body composition estimated by DXA with a reference technique, total body water method (TBW) in Chinese females in Hong Kong. Body composition was determined by DXA (Hologic 2000 *plus*) and TBW with deuterium oxide trace. Ninety-one Chinese female aged 20 to 60 years were studied. The mean body fat-free mass (FFM) was  $39.1 \pm 5.6$  kg by DXA and  $39.6 \pm 5.5$  kg by TBW ( $p > 0.05$ ). Mean percentage body fat (BF%) was  $39.5 \pm 7.9\%$  by DXA and  $38.7 \pm 8.7\%$  by TBW ( $p > 0.05$ ). Both FFM and BF% by the two techniques were strongly correlated. The FFM bias (TBW-DXA) was  $0.45 \pm 2.2$  kg and the BF% bias (TBW-DXA) was  $-0.75 \pm 3.6\%$ . The BF% bias positively correlated with BF% by TBW ( $r = 0.41$ ,  $p < 0.001$ ). It also weakly positively correlated with waist girth ( $r = 0.25$ ,  $p < 0.05$ ). Both FFM and BF% derived by DXA in the studied Chinese females only slightly differ from values by TBW. DXA can be used as one of body composition techniques in Chinese population. However, values of percent body fat by DXA must be regarded with caution when extremely lean or fat subjects are measured.