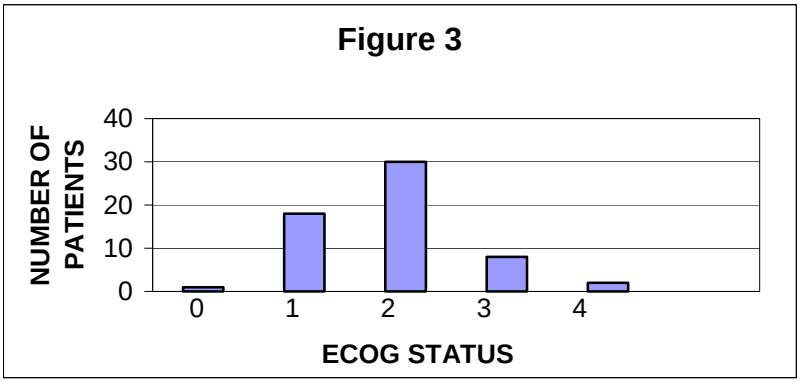
RESULTS:

A total of 60 patients were recruited to the study of which 41 were male and 19 were female. The median age was 36 years (range: 23 – 55 years).

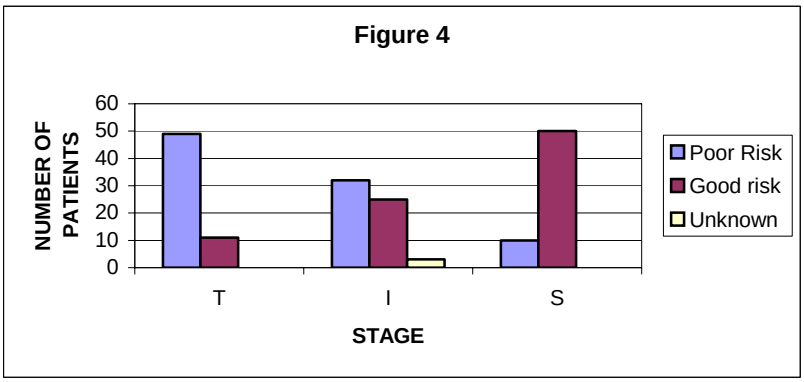
As illustrated in Figure 3, most patients in the study had good ECOG performance scores of 1 and 2. Two patients with ECOG performance scores of 4 were inadvertently included in the trial in violation of the exclusion criteria.

Figure 3

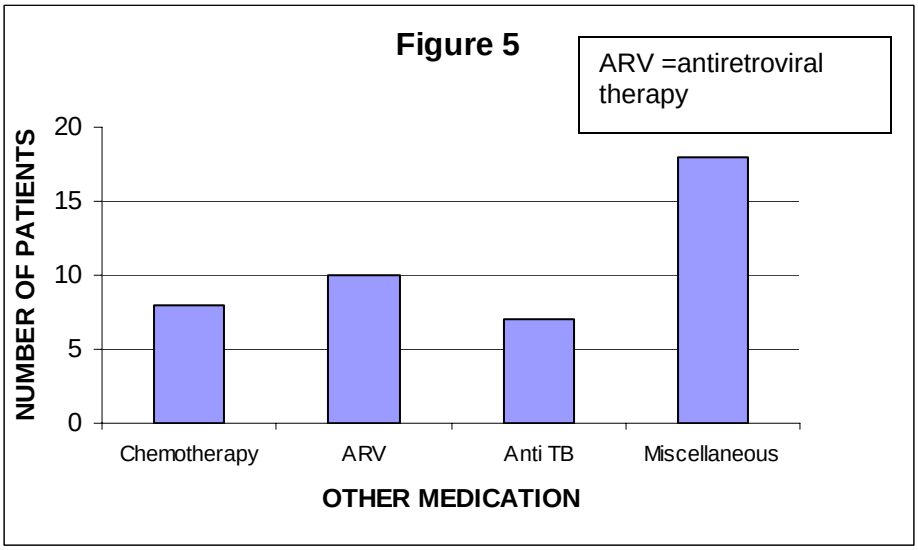


Most patients (n=49) had primary tumours with poor risk features, while few patients (n=10) included in the trial had systemic disease (Figure 4).

Figure 4



Patients often received additional medication during the course of their illness for Kaposi sarcoma and co-morbid conditions (Figure 5). Of the 60 patients recruited to the study only 10 received antiretroviral therapy (ARV).



The pre-treatment blood parameters showed a mean white cell count of 5.7 (range: 2.2 – 16.2) and a mean platelet count of 249 (range: 18 – 971) both of which are within normal limits. The mean haemoglobin was 10.2 g/dl (range: 5.6 – 15.6 g/dl), which is low and suggestive of anaemia of chronic disease. The mean CD4 count was 230 (range: 7 – 726), which is also low and is indicative of the immunosuppression present in these patients.

As illustrated in Figure 6, the most commonly treated region was the lower limb (n=50). The median area treated was 714 cm^2 (range: 16 cm^2 –9310 cm^2), which is large and bears testimony to the extensive nature of the lesions seen. Most patients received treatment to 1 or 2 sites only. The maximum number of sites

treated in 1 patient was 4 sites (Figure7). Adjacent sites were treated with the same regimen as the initial site while non-contiguous sites were re-randomized. In treating non-contiguous sites individually each patient served as his own control.

Figure 6

SITES TREATED

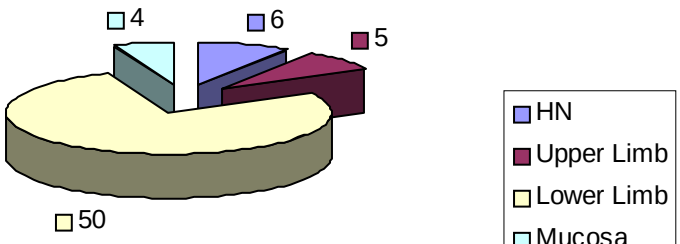
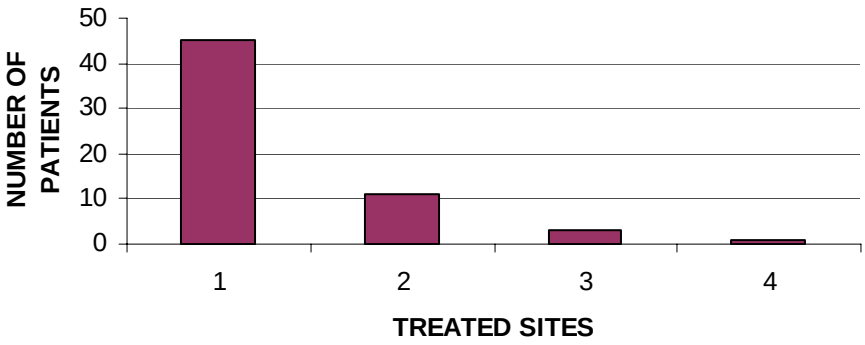


Figure 7



As shown in Table 3, the 2 treatment arms were comparable in terms of ECOG

status (p=0.41), treated sites (p= 0.71), use of antiretroviral therapy (p=0.26), gender (p=0.41), T stage (p=0.16), I stage (p=0.72) and S stage (p=0.95).

The area treated in Arm A was 1696,8cm^2 compared with 875,7cm^2 in Arm B which approached significance (p=0.06).

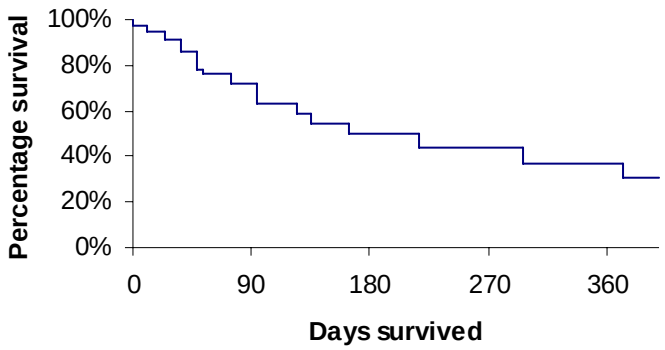
TABLE 3: COMPARISON OF TREATMENT ARMS BY SITE:

	24 Gy in 12 fractions	20 Gy in 5 fractions	p value
ECOG: 0	1	0	0.41
1	8	11	
2	21	13	
3	5	3	
4			
REGION:			
Head and neck	1	2	0.71
Upper Limb	3	2	
Trunk	1	1	
Lower Limb	29	20	
Mucosa	2	4	
USE OF ANTIRETROVIRALS	9	4	0.26
T STAGE:			
0	4	7	0.16
1	32	22	
I STAGE:			
0	16	10	0.72
1	19	18	
Unknown	1	1	
S STAGE:			
0	30	24	0.95
1	6	5	
AREA TREATED	1696.8cm^2	875.7cm^2	0.06

At the time of reporting, 28 patients were alive and 32 patients have died. The median follow-up of patients who are alive was 160 days (range: 0 – 545 days).

The overall survival for the whole group was 37% at 1 year (Figure 8). The median overall survival was 164 days (range: 120 – 373 days).

Figure 8
Overall survival by Patients



On univariate analysis using the Log Rank Test, ECOG performance score (p=0.0007), haemoglobin level above or below 12g/dl (p=0.01), stage of primary tumour (p=0.03), I stage (p=0.01) impacted on survival as depicted in Figures 9 to 12 below. Gender (p=0.39), presence of systemic illness (p=0.35) (Figure 13), age above or below 35 years (p=0.35), use of antiretroviral therapy (p=0.52), use of chemotherapy (p=0.8) and white cell count above or below 4 (p=0.36) were found to have no impact on overall survival.

Overall survival could not be compared by radiation treatment group as a single patient may have received both treatment regimens to different sites.

Figure 9
Overall Survival by ECOG status
p=0.007

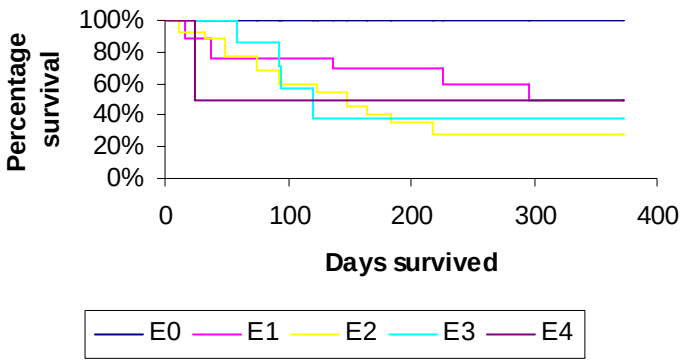


Figure 10
Overall survival by Hb < and > 12
p=0.01

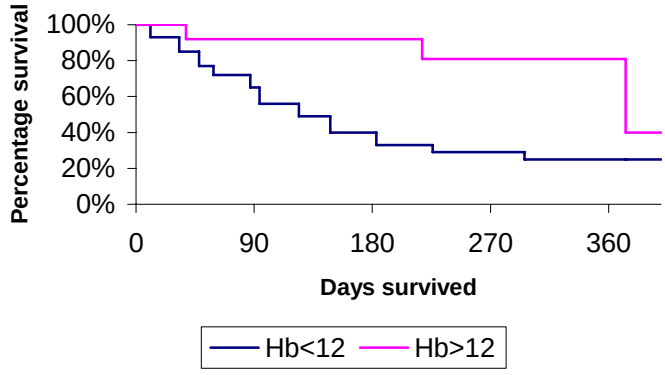


Figure 11
Overall survival by T Stage
p=0.03

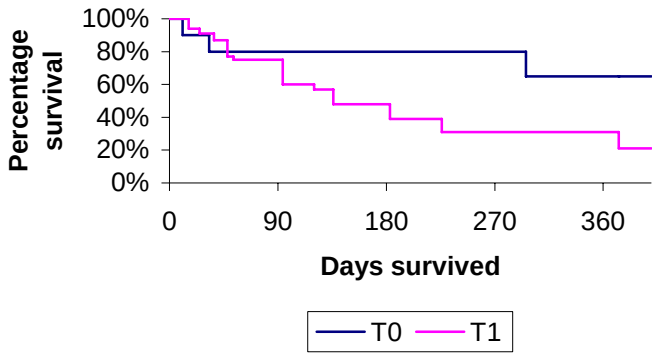
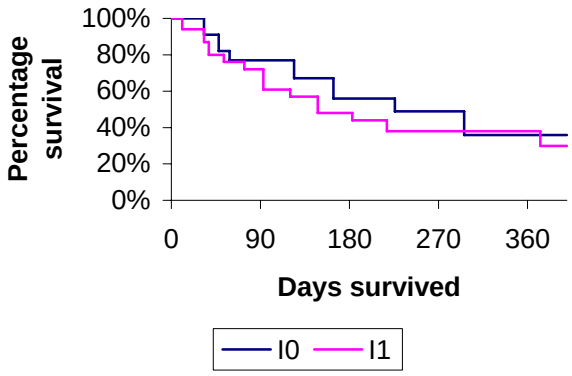
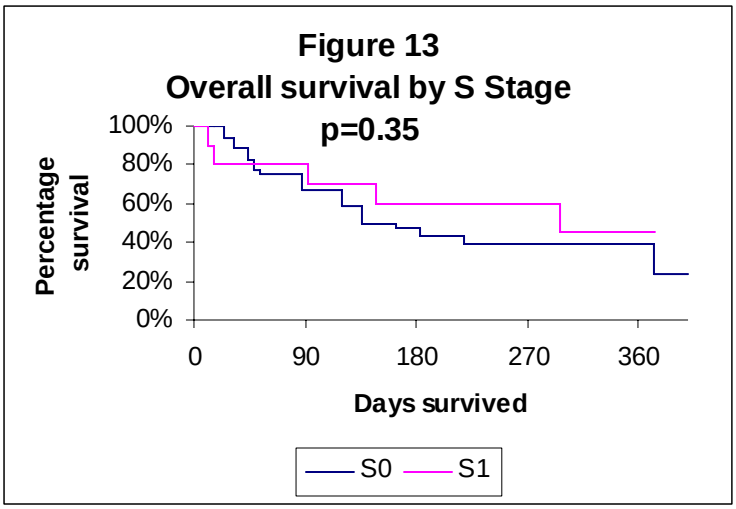


Figure 12
Overall survival by I Stage
p=0.01





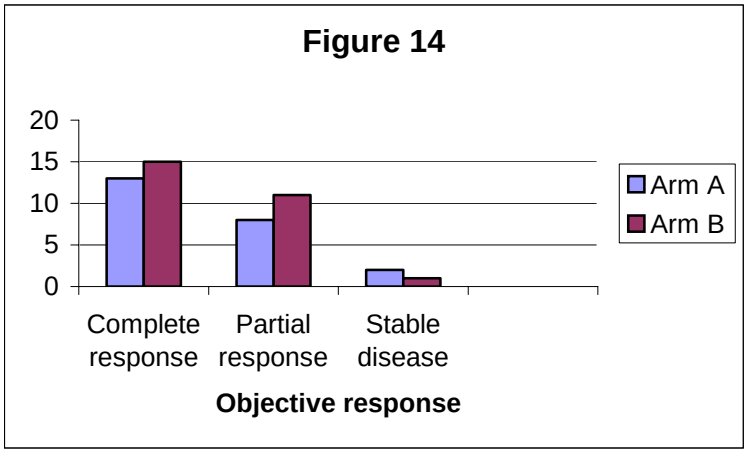
On multivariate analysis using the Cox Proportional Hazard Test, age (p=0.05), T stage of primary tumour (p=0.02), I stage (p=0.002) and the presence of systemic illness (p=0.02) were found to impact overall survival.

The treatment response was assessed in 50 of the 65 treated sites. All sites could not be assessed as patients either died during the radiation treatment or defaulted follow-up on completion of the radiation course. The maximum treatment response and time to maximum response that occurred at each site were documented.

A complete response was recorded in 13 sites in Arm A and 15 sites in Arm B. Examples of complete responses are shown in Appendix 8 and 9. A partial response was recorded in 8 sites in Arm A and in 11 sites in Arm B. Examples of partial responses are shown in Appendix 10 and 11. Stable disease was documented in 2 sites in Arm A and in 1 site in Arm B (Figure 14). The overall objective response rate was 91% for Arm A and 96% for Arm B.

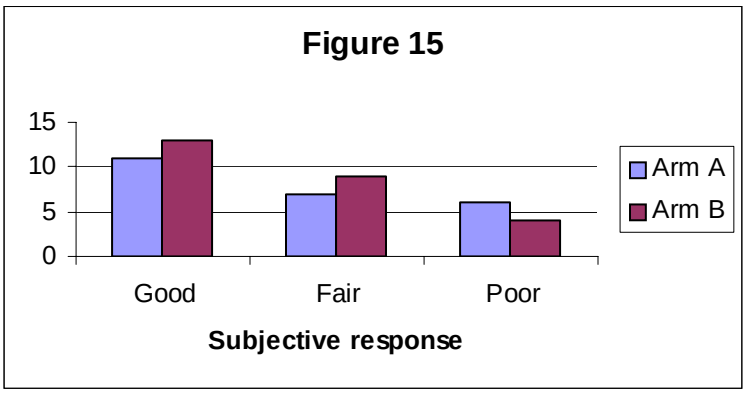
Objective response rates were equal for the 2 treatment arms (p=0.73). The time to maximal objective response was a mean of 3 months (range: 1 – 14 months). The time to maximal response was equal for the 2 treatment arms (p=0.65).

Figure 14

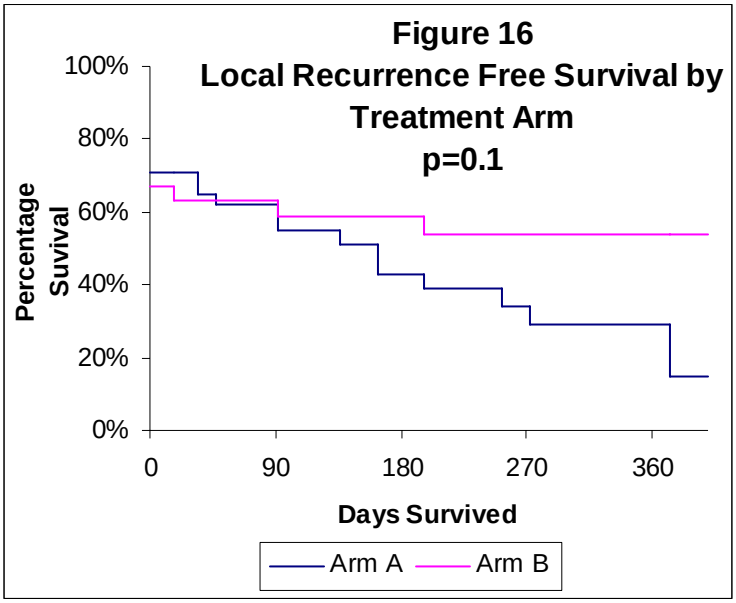


A good subjective response was reported in 11 sites in Arm A and at 13 sites in Arm B. A fair response was recorded in 7 sites in Arm A and in 9 sites in Arm B. A poor response was documented in 6 sites in Arm A and in 4 sites in Arm B (Figure 15). The subjective response was equal for the two treatment arms (p=0.69).

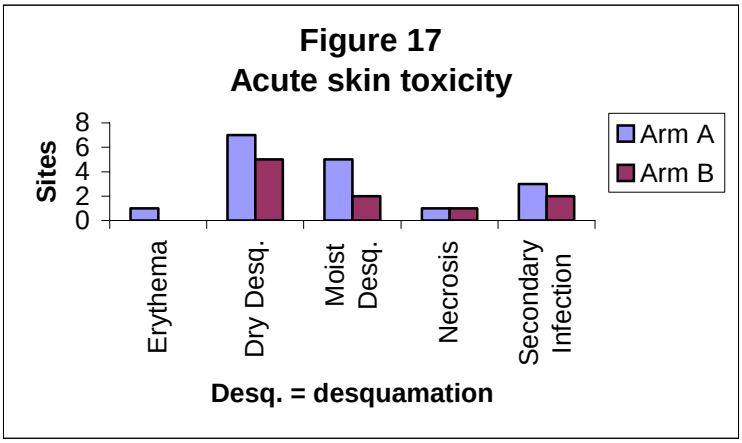
Figure 15



Local control was achieved in 41 treated sites. The median time to local recurrence was 92 days (range: 0 – 475 days). The median local recurrence free survival was 150 days for ARM A and 455 for ARM B (Figure 16) and was equal for the 2 treatment arms (p=0.11, log rank test).



As illustrated in Figure 17, acute skin toxicity was recorded in 27 sites of which 17 sites were in Arm A and 10 sites were in Arm B. Acute skin toxicity was equal for the 2 treatment arms (p=0.77). The most common acute toxicity was dry desquamation, which occurred in 12 sites. Moist desquamation was documented in 7 sites, necrosis in 2 sites and secondary bacterial infection at 5 sites. Acute mucosal toxicity of dry mouth was documented at 1 site and mucositis at 1 site. Both these sites were randomized to Arm B. There were no cases of acute mucosal toxicity recorded in patients randomized to Arm A.



Late skin reactions were recorded at 21 sites of which 9 sites were in Arm A and 12 sites were in Arm B. The most commonly occurring reaction was pigment change (n=16). Post radiation oedema developed at 5 sites of which 3 sites were in Arm A and 2 sites were in Arm B (Figure 18). Necrosis or ulceration occurred at 5 sites of which 1 site was in Arm A and 4 sites were in Arm B (Appendix 12). Late skin reactions were equal for the 2 treatment arms (p=0.24).