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EFFICIENT USE OF FEMORAL EAD ALLOGRAFTS: A RETROSPECTIVE STUDY ON ANNUAL WEIGHT EVALUATION

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SUMMARY

Introduction: UMMC Bone Bank supplies FH allografts for hip and knee revision arthroplasty, oncology and foot and ankle cases to help restore bone stock and reconstruct bony defects. Typically, FH is ordered by the number of heads and not by weight. Hence, the estimation of bone required is often inaccurate preoperatively. In some cases, surgeons order excessive amount but with possible wastage in the operating theatres. Given this, the aim of the present study was to determine the yield of FH by the weight, establish new scaling system and to avoid immoderate ordering and wastage. **Methods:** This study was conducted as a retrospective study of 3-year duration performed from January 2015 to December 2017 in UMMC. FHs were procured from patients undergoing elective total hip arthroplasty. FHs tripled packed with polyethylene bag and weight was recorded using electronic balance before storing into -80ºC freezer. Thoroughly screened FHs were sterilized using gamma rays before used for clinical transplantations. Data on demographic and weight of FHs were analyzed. **Results:** A total of 93 FHs were procured from 17(18.30%) men and 76(81.70%) women. The majority were Chinese (n=58, 62.40%), followed by Malays (n=11.80%), Indians (n=16, 17.20%) and 10 (1.0%) patients from others. The mean age of the patients was 73.22 ± 9.28 (range 36 - 93) years. The mean weight of FH was found to be 72.83 ± 20.01g (43.84g as smallest and 144.02g as largest). There was no statistically significant difference in FH weight procured from men and women (85.09 ± 22.21g vs 70.08 ± 18.56g); $p>0.05$). Independent *t-test* found FH weight difference in 2 groups; Malays vs Chinese and Chinese vs Indians (66.38 ± 12.67 vs 74.18 ± 20.32 and 74.18 ± 20.32 vs 62.71 ± 10.69; $p<0.05$). **Discussion:** FH can be classified as small (<50g), medium (50-75g) and large (>75g). Contaminant-free, fresh frozen FH is an increasingly scarce resource and should not be wasted. Therefore, this standardized scaling system is paramount so surgeons have sufficient graft available at the time of operation while not ordering excess FH. The cost of FH also can be adjusted and justified based on scaling system. **Conclusion:** It is really essential for tissue banks to record the weight of FH as it helps to determine amount of usable graft during bone transplantations. This approach eradicate mismatch of need and supply of FH combined with high cost.