

Purpose: A decision analysis model evaluating the impact of choice of initial procedure in the treatment of medial compartment gonarthrosis was presented earlier (COA 2007). This was based on a linear rate of attrition, not due to infection. Using literature derived parameters, it was concluded that use of UKR as initial procedure, as opposed to total knee replacement (TKR), would lead to more procedures, but fewer infections and fewer days of hospitalization, over a 20 years period.

Surgical decision making is based on the surgeon's belief system re. the various outcome parameters. Decision analysis facilitates interpretation of the ramifications of the assessment of the various outcome parameters. This report evaluates the belief system of a group of orthopaedic surgeons in BC.

Methods: The decision analysis model was presented to a group of 8 orthopaedic surgeons, all experienced in both UKA and TKA, at a study session. Both community-based and university based surgeons participated. The premises of the model were discussed. Subsequently, consensus was obtained re. the various outcome parameters. These values were entered for evaluation.

Results:

Consensus was established re:

- a/linear attrition rate was realistic.
- b/revision of UKR -> TKA is similar to primary TKA.
- c/2nd and higher total knee revisions could be lumped together.

Outcome parameters (10 y attrition(%), cost(\$),Hospitalization (days), infection rate(%)):

- 1/UKR: 10%, \$11,000, 1d, 0.5%
- 2/TKR: 5%, \$13,400, 3d, 1%
- 3/UKR->TKR: 5%, \$13,400, 3d, 1%
- 4/TKA 1st revision: 15%, \$17,500, 4d, 3%
- 5/TKA 2nd and higher revision: 25%, \$20,000, 7d, 5%

This was applied to a cohort of 100 patients with medial compartment OA, aged 60 y, over a 20 year period, annual mortality 2%.

Primary procedure UKA: 115 procedures, cost excl. infection \$1,299,558, hospital stay 145d, infections 0.66.

Primary procedure TKA: 108 procedures, cost excl. infection \$1,492,763, hospital stay 336d, infections 1.27

Conclusion:

UKR is a valid option for treatment of medial compartment gonarthrosis, as assessed by this group of BC surgeons, based on consideration of cost, hospitalization and total infection burden, despite a higher re-operation rate.