CONCLUSIONS AND SUGGESTION

Biphasic Calcium Phosphate (BCP) seemed to be a great potential bone substitute in biomedical fields. Based on the results obtained in this study, sample B with ratio molarity Ca/P of 0.334 M:0.2 M was suitable for bone implantation because of its characteristics of BCP ceramics. Sample B2 which is BCP 100 ml volume can be assumed as reproducible ceramics shown from XRD pattern which suitable to the expected characteristics of material bone graft.

In vivo evaluation of BCP was done for observing biodegradability, bioresorbability, and osteoconductivity of sample which implanted into sheep’s bone. Based on pathological evaluation, the results indicated that BCP ceramics was biodegradable and bioresorbable but less osteoconductive. In contrary, HA-chitosan was not biodegradable and bioresorbable but more osteoconductive. Moreover, bone recovery without bone graft (control sample) was more complete than that with HA-Chitosan and BCP bone grafts. Despite of that, the bone grafts did not conform to the requirements of the biomaterial prior to clinical used.

Therefore, advanced research was required for synthesizing ceramics consisting of mineral and matrix as apatite growth or making a porous ceramics or composite to stimulate osteoblasts coming into bone graft material. In vivo evaluation was also required for observing the influence of bone graft to the bone recovery with longer observing time.

REFERENCES