Purpose: For elderly women, post-operative whole breast irradiation (WBI) is warranted to achieve breast cancer local control. However, due to comorbidities and transportation, WBI is sometimes difficult to perform. The present study analyzed, for women older than 70 years, the feasibility, reproducibility and impact on functional autonomy of a post-operative accelerated and partial breast irradiation (APBI) using interstitial high dose rate brachytherapy (IHRB).

Material and methods: From July 2004 to April 2008, 46 pts were enrolled in a phase II national prospective trial. Among those, 40 pts were eligible according to the inclusion criteria (age > 70, T1-2 < 30 mm, non-lobular invasive carcinoma, no lymph node involvement, clips in the tumor bed, security margin ≥ 2mm). Plastic tube implantation was performed at the time of lumpectomy and sentinel or axillary lymph node dissection. IHRB delivered a total dose of 34Gy/10f/5d. Dose-volume adaptation was achieved by dwell location and time variation.

Conclusions: The presented study confirms that APBI represents a feasible and reproducible technique for elderly women. APBI did not alter patient functional autonomy. APBI could reasonably be considered as an alternative to whole breast irradiation for elderly women presenting with an early stage breast cancer.

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