Background: Even if Brachytherapy (BT) in low risk prostate cancer (CaP) is performed since more than 20 years, it is still an uncommon procedure because of the problems related to the organisation and collaboration among urologist, radioterapist and physics, to the competition of alternative therapies, to dogmatics and schools beliefs and to the poor knowledge of this technique.

Methods: Between May 1999 - September 2010 250 patients with low risk CaP underwent $^{125I}$BT using a “real time” approach; the seeds implantation was performed using Mick applicator (190 patients), and “Quick-Link” technique (60).

Oncologic results were reported in the first 150 cases with a mean follow-up of 95 months; while functional outcomes and complications were assessed in all patients at different time points with a mean follow up of 65 months.

Results: A good quality implantation was assessed in 88% of patients (D90 > 140 Gy). A biochemical failure was assessed (Phoenix criteria) in 10 patients (6.6%). The prostatic biopsy showed a CaP in 6 who underwent RRP (4) and external RT (2); one patient developed a systemic progression with secondary bone lesions. 4 patients with negative biopsy were treated with total androgen blockade (2) and with watchful waiting (2). Regarding functional results, we assessed a moderate incidence of irritative disorders (70%) during the first six months and a good recovery of erectile function after one year from surgery (78.8%).

Conclusions: Brachytherapy in the low grade risk prostatic cancer represents a good alternative to the RRP with excellent functional and oncologic results.