radiotherapy. The largest cancer registry in the USA, SEER (Surveillance, Epidemiology, and End Results) did not link radiotherapy to a specific surgical procedure, but it is likely that most of the patients given radiotherapy had lumpectomy rather than mastectomy. From this we estimate that 64% of patients treated with lumpectomy also had radiotherapy.

Excision without radiotherapy is offered to patients with small tumors and low-grade, non-comedo histology, but it is not formally ‘recommended’ in the NCCN criteria, which define ‘small’ as ‘0.5 cm or less’. Some American DCIS specialists feel comfortable using excision alone with lesions 2.5 cm in size or smaller regardless of tumor grade if the margins are more than 10 mm [17]. In practice, about 36% of patients with DCIS seem to be treated with lumpectomy alone (Fig. 1). Excision alone without radiotherapy is more likely to be employed for those aged more than 50 years [7].

In a survey, North America radiotherapists \( n = 1,137 \) were more likely than European radiotherapists \( n = 702 \) to recommend radiotherapy for DCIS, but the differences were greater among community than academic radiotherapists [18]. For example, when asked about treatment of a grade I to II, less than 2.5 cm DCIS lesion with a margin more than 10 mm, 53% of the academic and 28% of the community radiotherapists in North American indicated that they would not use radiotherapy, whereas 55% of the academic and 60% of the community radiotherapists in Europe recommended no radiotherapy for this lesion.

Although the first randomized clinical trial that demonstrated a beneficial effect from tamoxifen for DCIS appeared in 1999 [19], there is still considerable reluctance to employ this treatment routinely. The NCCN recommends that physicians ‘consider’ tamoxifen for DCIS regardless of the primary treatment or tumor characteristics (Fig. 2). There are no data available from SEER on the use of tamoxifen for DCIS, but its use in this setting has been reported from several cancer centers. In a retrospective evaluation of 277 DCIS patients at MD Anderson Cancer Center between 1999 and 2002, 60% were offered tamoxifen; 54% of those offered accepted the recommendation [20]. There was no change in the frequency with which tamoxifen was offered between 1999 and 2002. The most common reason that physicians did not recommend tamoxifen was that the patient’s primary treatment was mastectomy. The most common reason that patients declined tamoxifen was fear of the side effects. Of those given tamoxifen, 21% discontinued the medication because of side