Abstract:
The aim of this study was to evaluate the safety, stability and efficacy of Epi-LASIK with a 1000 hertz excimer laser system. 40 eyes of 23 patients underwent an Epi-LASIK procedure using the Gebauer EpiLift and the WaveLight Concept System 1000. Preoperatively as well as 1 month, and 3 months postoperatively, a complete ophthalmic examination, including objective and subjective refraction (UCVA, BCVA) and topography, was performed. The mean preoperative spherical equivalent (SE) was -4.07 D (SD ± 1.89 D). 1 month after surgery, the spherical equivalent was + 0.01 D (SD ± 0.33 D), and 3 months after surgery -0.06 D (SD ± 0.28 D). 3 months after the Epi-LASIK procedure, 90 % of the patients were within ± 0.5 D of the intended correction, and 97.5 % were within ± 1.0 D of the intended correction. The astigmatism was reduced from -0.77 D (SD ± 0.68 D) to -0.24 D (SD ± 0.29 D) 3 months after surgery. 34 of the 40 eyes had a clear cornea 3 months after surgery, and 6 of the 40 eyes presented with haze grade 0.5. In our pilot series of 40 eyes, the use of the 1000 hertz excimer laser did not reveal any specific clinical side effects potentially associated with the use of a high repetition rate. These first results with Epi-LASIK and the WaveLight Concept System 1000 are very promising.