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Classical interstitial implant systems such as the Manchester, Quimby, and Paris systems provide rules for catheter placement to achieve adequate target dose coverage and acceptable dose homogeneity. Application of these rules to optimized HDR breast implants is not always appropriate. This work presents a dosimetric study of the relationship between catheter spacing, target dose coverage, and dose homogeneity for HDR breast implants. Rectangular contours were entered into an HDR brachytherapy treatment planning system (TPS) to generate prism-shaped CTVs. Equally spaced catheters were entered into the TPS to generate implants of the CTV consisting of two or more planes. For a given catheter spacing, target thickness was varied to identify the maximum thickness of target treatable while maintaining adequate prescription dose coverage of the CTV ($CTV_{100} \geq 95\%$). Geometric optimization of dose distribution was applied. Dosimetric analysis included measurement of the amount of irradiated tissue receiving 100%, 150%, and 200% of the prescription dose (respectively, V100, V150, V200), the maximum diameter of the 200% isodose in any one slice of the CTV, and the dose homogeneity index (DHI), defined as (1-V150/V100). Values of these metrics as functions of the ratios of prescription dose to mean-central-dose (F-factors) were further evaluated. Maximum target thickness maintaining $CTV_{100} \geq 95\%$ is shown as a function of catheter spacing and F-factor for two- and three-plane implants. The results of this study may serve as guidance in designing an HDR breast implant, taking into consideration acceptable values for F-factor, V150, V200, and DHI.