

COMPARISON OF DIFFERENT SCHEMES OF MULTIPLE TREATMENT FRACTIONS PER DAY

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Hyperfractionation or altered fractionation is a form of nontraditional radiation therapy using multiple treatment fractions with various doses per day. Peters and Ang further categorize altered fractionation into five different regimens that has been employed in clinical practice namely, hyperfractionation in which the total dose and number of dose fractions are increased, size of dose per fraction is reduced and the overall time is relatively unchanged; quasi-hyperfractionation which resembles hyperfractionation except that the total dose is not increased; accelerated fractionation in which overall time is reduced, number of dose fractions, size of dose per fraction and total dose are either unchanged or somewhat reduced, relative to the extent of overall time reduction; quasi-accelerated fractionation which resembles accelerated fractionation except that overall time is not reduced; and accelerated hyperfractionation which incorporates features of both hyperfractionation and accelerated fractionation. Experience from reported clinical data shows that certain degree of therapeutic gain can be attained with hyperfractionation or accelerated fractionation regimen. The acute reactions are more severe. Greater late tissue damage may appear with increased fraction size and daily dose. Tolerance of the spinal cord must be respected should altered fractionation regimen is delivered. Since Withers and other reported the clinical significance of accelerated proliferation phenomenon during the course of radiation therapy, reports are emerging documenting the negative therapeutic effect of prolonged overall treatment time. Altered fractionation is considered one of the effective means to solve the problem.

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