RECOMMENDATIONS

1. Intensity modulated radiotherapy (IMRT) for cervical carcinoma is a safe treatment with low acute toxicity. Longer follow-up is needed to assess chronic toxicity and disease control.

2. This potential new role for IMRT merits further evaluation with larger patient numbers. Whether or not these new technologies will provide benefit to the patients in terms of survival has to be further investigated in larger prospective clinical trials.

3. In centers with no or limited access to MRI, CT-based delineation of HRCTV may be applied as a tool of contouring for 3D image guided adaptive BT, especially when it is accompanied by reproducible 3D clinical drawing based on 3D precise clinical examination in addition to FIGO stage.

4. Future studies are needed to assess the reported DVH parameters for these CT based target structures in clinical practice.

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الملخص العربى

سرطان عنق الرحم هو ثالث أكثر أنواع السرطان شيوعا بين النساء في جميع أنحاء العالم. العلاج الإشعاعي الموضعي ، بالتزامن مع الإشعاع الخارجي والعلاج الكيميائي، هو العلاج لسرطان عنق الرحم المتقدمة موضعيا. العلاج الإشعاعي في الحوض كله يؤدي إلى تعرض كميات كبيرة من الأمعاء الدقيقة والغليظة والمستقيم والمثانة. ولذلك، أعراض سمية الجهاز الهضمي والبولي التناسلي الحادة والمزمنة هي من بين الأكثر أهمية في هؤلاء المرضى.

لتحسين الآثار الجانبية العلاج، تعمل التقنيات المتقدمة على السماح بتقديم جرعات كافية لكلا الورم ومناطق التصريف اللمفاوي، بينما في الوقت نفسه تتجنب الأنسجة الطبيعية. العلاج الإشعاعي ثلاثي الأبعاد، وكذلك العلاج الإشعاعي متغير الشدة تضمن تحسن بوضوح في الجرعات إلى الورم المستهدف دون زيادة الجرعة إلى الأجهزة الحيوية.

شملت هذه الدراسة ٤٥ مريضة تعانين من سرطان عنق الرحم المتقدم موضعيا اللائي تم علاجهن في قسم العلاج الإشعاعي، جامعة فيينا الطبية. تم تقسيم المرضى في هذه الدراسة إلى مجموعتين. وتضمنت المجموعة الأولى (المجموعة العلاجية) ٣٠ مريضة، والمجموعة الثانية (مجموعة التصوير) وشملت ١٥ مريضة من المصابات بسرطان عنق الرحم المتقدم موضعيا.

وكان الغرض من هذه الدراسة تسجيل النتائج الإكلينيكية باستخدام العلاج الإشعاعي متغير الشدة لعلاج سرطان عنق الرحم المتقدم المحلي، ومقارنتها مع العلاج الإشعاعي ثلاثي الأبعاد من حيث السمية الحادة والمزمنة. وعليه فقد تم تقسيم المجموعة الأولى إلى مجموعتين فرعيتين على حسب طريقة العلاج الإشعاعى الخارجى كالتالي:

المجموعة الفرعية (أ-١): شملت ١٥ مريضة تعانين من سرطان عنق الرحم المتقدم موضعيا وتم علاجهن بواسطة علاج الحوض بواسطة الإشعاع ثلاثي الأبعاد يليه العلاج الإشعاعي الموضعي الموجه.

المجموعة الفرعية (أ-٢): شملت ١٥ مريضة تعانين من سرطان عنق الرحم المتقدم موضعيا وتم علاجهن بواسطة علاج الحوض بواسطة الإشعاع متغير الشدة يليه العلاج الإشعاعي الموضعي الموجه.

معظم المرضى عانين السمية الحادة الخفيفة والتي لم تستوجب إيقاف العلاج. وعلاوة على ذلك، كانت الأعراض الجانبية الناتجة عن العلاج الإشعاعي متغير الشدة أقل كثيراً من تلك الناتجة عن العلاج الإشعاعي ثلاثي الأبعاد. كانت هناك نسبة أعلى من سمية الجهاز الهضمي الحادة في المرضى الذين عولجوا بواسطة العلاج الإشعاعي ثلاثي الأبعاد مما كان عليه في العلاج الإشعاعي متغير الشدة. كان الإسهال أكثر مضاعفات الجهاز الهضمي شيوعاً. الإسهال وآلام في البطن حدثا في ٧٣.٣٪ و ٤٠٪ من المرضى من مجموعة **(أ-١)** مقابل ٦٠٪ و ١٣٪ من مجموعة **(أ- ٢)** على التوالي.

كان معدل الدرجة الثانية من سمية الجهاز الهضمي أقل في مجموعة العلاج الإشعاعي متغير الشدة وكذلك قل معدل استخدام الأدوية مضادة الإسهال. كذلك حدثت سمية الجهاز الهضمي المتأخرة بصورة أكثر كثافة في المرضى الذين تم علاجهم بواسطة العلاج الإشعاعي ثلاثي الأبعاد حيث عانى ٦٠% من مرضى المجموعة **(أ-١)** من سمية الجهاز الهضمي في مقابل ٤٦.٧% في المجموعة **(أ- ٢)**. عانت مريضة واحدة فقط من المجموعة **(أ- ٢)** من سمية الجهاز الهضمي المتأخرة الشديدة حيث كانت تعاني من ناسور مستقيمي مهبلي.

وذكر الشيء نفسه بالنسبة لسمية الجهاز البولي التناسلي حيث كانت جميع الأعراض البولية التناسلية الحادة أعلى كثيرا في المرضى الذين تلقوا العلاج الإشعاعي ثلاثي الأبعاد مقارنة مع المرضى تلقى العلاج الإشعاعي متغير الشدة. وكانت أكثر الأعراض شيوعاً هو تواتر التبول حيث تم تسجيل الدرجة الثانية منه في ٢٠% و ٦% من مرضى المجموعتين A1 و A2 على التوالي. كما تم تسجيل البيلة البولية من الدرجة الأولي في ٢٦.٧% من مرضى المجموعة **(أ-١)** و في ٦.٧% من مرضى المجموعة **(أ- ٢)**.

أظهرت نتائج الدراسة الحالية أن تقليل الحجم من أنسجة الأمعاء الدقيقة والمستقيم و المثانة البولية و التي تتعرض للجرعة القسوى من الإشعاع ينتج عنه انخفاض ملحوظ في أعراض سمية الجهازين الهضمي و البولي التناسلي. في هذه الدراسة، كان هناك انخفاض ذو دلالة إحصائية في حجم الأمعاء الدقيقة التي تلقت جرعة إشعاعية

عالية حيث كانت جرعة العلاج الإشعاعي المتوسط التي تلقتها الأمعاء الدقيقة في المرضى الذين تلقوا العلاج الإشعاعي متغير الشدة ٢٧.١٦ ± ١.٤٣ غراي في مقابل ٤١.٠٧ ± ١.٣٣غراي في مجموعة العلاج الإشعاعي ثلاثي الأبعاد.

كان هناك أيضاً انخفاض ذو دلالة إحصائية في متوسط جرعة الإشعاع التي تلقاها المستقيم في مرضى المجموعة **(أ-١)** عن مرضى المجموعة **(أ- ٢)**. وعلى النقيض، فقد تلقت المثانة البولية جرعة أكبر في المجموعة **(أ- ٢)**.

هذا و قد قيمت هذه الدراسة طريقتين من طرق تحديد الورم المستهدف أثناء العلاج الموضعي لسرطان عنق الرحم إما عن طريق الأشعة المقطعية أو الرنين المغناطيسي. و قد أظهرت المقارنة بين الطريقتين أن الحجم الورم المحدد بواسطة الأشعة المقطعية كان أكبر من المحدد بواسطة الرنين المغناطيسي.

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كلية الطب
قسم علاج الأورام
والطب النووى

دور العلاج الاشعاعى المتغير الشدة والعلاج الاشعاعى الموضعى الموجهة بالأشعة فى علاج سرطان عنق الرحم المتقدم موضعيا

رسالة مقدمة

لقسم علاج الأورام والطب النووى
كلية الطب ـ جامعة الإسكندرية
ضمن متطلبات درجة

الدكتوراه

فى

علاج الأورام والطب النووى

مـــن

نعمات السيد السيد حجازى
بكالوريوس الطب والجراحة ،٢٠٠٢
ماجستير العلاج الإشعاعى، ٢٠٠٨
كلية الطب، جامعة الإسكندرية

[٢٠١٥]

جامعة الإسكندرية
كلية الطب
قسم علاج الأورام والطب النووى

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رسالة مقدمة من

نعمات السيد السيد حجازى

للحصول على درجة

الدكتوراه

فى

علاج الأورام والطب النووى

لجنة المناقشة والحكم على الرسالة	**التوقيع**
أ.د/ محمد يسرى سليمان جوده أستاذ علاج الأورام والطب النووى قسم علاج الأورام والطب النووى كلية الطب جامعة الإسكندرية	.....
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