

Clinical Observation on Intensity-Modulated Radiation Therapy (IMRT) in 56 Patients with Postoperative Cervical Cancer

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Abstract

Objective: To retrospectively analyze IMRT treatment on partial pelvic control rate, survival rate and future toxic and adverse effects at year 1, 2 and 3 in patients with postoperative cervical cancer. **Methods:** Fifty-six postoperative cervical cancer patients, aged between 26 - 65 years old (median age of 42 years old) with postoperative radiotherapy indications have carried out the retrospective analysis from July 2007 to July 2011 in Guizhou Cancer Hospital of which 22 patients \geq 50 years old and 34 patients < 50 years old. Twenty-five patients were in FIGO stage I and 31 patients of stage II. Postoperative pathology showed that 47 patients had squamous cell carcinoma and 9 patients of adenocarcinoma. Factors for postoperative supplement radiotherapy due to highly recurrent risks include positive pelvic lymph nodes (21 cases), lateral uterine invasion (4 cases), invasive depth of neoplasm in excess of 1/2 (20 cases), vessel invasion (11 cases), 56 patients in radiotherapy with full pelvic IMRT, and external exposure of DT50.4 Gy/28 f/5 W. Patient was received Ir¹⁹² close range radiotherapy after one month of postoperation, 5 Gy/week, DT20 Gy, as well as paclitaxel (135 - 175 mg/m²) + cisplatin (60 - 80 mg/m²) simultaneous and/or synchronous chemotherapy 2 - 4 cycles. Follow-up was lasting for 3 - 36 months and the total follow-up rate was 95%. **Results:** One-year overall survival rate and partial pelvic control rate were 100.0% and 96.4%; two-year overall survival rate and partial pelvic control rate were 98.2% and 96.4%; three-year overall survival rate and partial pelvic control rate were 94.6% and 89.2%. Positive lymph nodes and lateral uterine invasion were independent prognostic factors that impacted the overall survival rate while staging, vessel invasion were independent prognostic factors of partial pelvic control rate. According to (RTOG) evaluation criteria of acute and chronic radiation reactions, grade I further rectal reaction was 26.8% and 8.9% for grade II and 1.7% for grade III; grade I further urinary reaction was 23.2% and 5.3% for grade II and 0% for grade III; and grade I further hematological toxicity was 41.1% and 30.3% for grade II and 8.9% for grade III. **Conclusion:** A satisfactory effect can be achieved on partial pelvic control rate and overall survival rate in IMRT treatment for patients with postoperative cervical cancer, which is in accordance

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with results reported in several published documents. Moreover, the radiotherapy-related further toxic and adverse effects can be acceptable.

Keywords

Cervical Cancer, IMRT, Clinical Observation, Toxic and Adverse Effects

56例宫颈癌术后调强放射治疗(IMRT)的疗效观察

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摘要

目的: 回顾性分析宫颈癌术后IMRT治疗患者1、2、3年盆腔局部控制率、生存率及远期毒副反应。方法: 回顾性分析2007年7月~2011年7月间贵州省肿瘤医院子宫颈癌根治术后具有术后放疗指征的患者56例, 年龄在26~65岁之间(中位年龄42岁), 其中 ≥ 50 岁患者22例, < 50 岁34例。FIGO分期为I期25例, II期31例; 术后病理示鳞癌47例, 腺癌9例。具有高危复发风险需补充术后放疗的因素包括: 盆腔淋巴结阳性(21例); 宫旁侵犯(4例); 肿瘤侵犯浸润深度超过1/2(20例); 脉管侵犯(11例); 56例患者放疗采用全盆IMRT, 外照射DT50.4 Gy/28 f/5 W。术后满一个月行Ir¹⁹²近距离放疗, 5 Gy/次/周, DT20 Gy。并行紫杉醇(135~175 mg/m²) + 顺铂(60~80 mg/m²)同期和/或同步化疗2~4个周期。随访3~36个月, 总随访率为95%。结果: 1年总生存率、盆腔局部控制率分别为100.0%、96.4%; 2年总生存率、盆腔局部控制率分别为98.2%、96.4%, 3年总生存率、盆腔局部控制率分别为94.6%、89.2%。淋巴结阳性及宫旁侵犯为影响总生存率的独立预后因素, 分期、脉管侵犯为盆腔局部控制率的独立预后因素。按(RTOG)急慢性放射反应评价标准, 远期直肠反应1级26.8%、2级8.9%、3级1.7%; 远期泌尿系反应1级23.2%、2级5.3%、3级0%。远期血液学毒性1级41.1%、2级30.3%、3级8.9%。结论: 宫颈癌术后IMRT治疗在盆腔局部控制率及总生存率上能达到较满意疗效, 与多篇文献报道结果一致, 且放疗相关远期毒副反应是可接受的。

关键词

宫颈肿瘤, IMRT, 疗效观察, 毒副反应

1. 引言

宫颈癌是当今女性最常见肿瘤, 居我国妇科恶性肿瘤的首位。近年来, 宫颈癌的发病率呈上升和年轻化趋势, FIGO分期I-IIa期患者可行根治性手术, 术后高危因素是影响患者预后的关键[1]。由于重要器官小肠等术后进入盆腔内, 并发症明显增加[2]。调强放射治疗(IMRT)具有分别调节肿瘤靶区和邻近敏

感器官剂量强度的独特优势,可以在给予不规则临床靶区(cillicat target volume, CTV)(盆腹腔淋巴结、阴道上段及宫旁三角区)精确剂量照射的同时,减少正常组织(小肠、直肠、膀胱、骨盆骨等)的受量,达到减少并发症的目的[3]。我院于2007年起开始采用该项技术,并进行3年随访工作,现将初步研究结果报道如下。

2. 材料与方法

2.1. 一般资料

搜集2007年7月至2011年7月接受术后放疗的宫颈癌患者56例,其中年龄26~65岁(平均值45.3岁,中位值42岁);FIGO临床分期I期25例,II期31例;术后病理类型为鳞癌47例,腺癌9例。手术为广泛性子宫切除术+双侧附件切除+盆腔淋巴结清扫术+(单)双侧卵巢悬吊术。

2.2. 治疗方法

所有患者术后病理均有高危因素,盆腔淋巴结阳性37.5%,肿瘤侵犯浸润深度超过1/235.7%,脉管侵犯19.6%,宫旁浸润7.1%。56例患者均接受IMRT治疗,采用6 MvX射线,处方剂量为PTV50.4 Gy/28 F。术后满一个月行 Ir^{192} 近距离放疗,粘膜下0.5 cm剂量5 Gy/次,每周1次,总量约20 Gy。化疗方案采用紫杉醇($135\sim 175\text{ mg/m}^2$) + 顺铂($60\sim 80\text{ mg/m}^2$)联合化疗2~4个周期,化疗周期间隔21~28 d。治疗期间每周复查血常规,监测治疗中血液学毒性变化。

2.3. 随访方法

所有患者放疗后定期随访,监测有无复发及治疗相关的晚期副反应(RTOG评价标准)。所有患者随访情况通过回顾随诊时病例记载和电话随访获得。

2.4. 统计方法

生存者从放疗开始到末次复查或随访截止时间,死亡者从放疗开始至死亡时间。总生存率为放疗开始到任何死因所致的死亡及末次随访时间;无瘤生存率为放疗开始至因宫颈癌复发、转移或死亡时间;盆腔局部控制率为放疗开始时间至盆内出现复发转移时间。用SPSS3.0统计软件使用Kaplan-Meier法计算总生存率、盆腔局部控制率、无瘤生存率并用Logrank法检验差异;Logrank法单因素分析有意义者进入Cox回归模型多因素分析。

3. 结果

3.1. 随访

随访时间3~36个月,总随访率为91%。1、2、3年随访例数分别为52、45、30例,随访率分别为93%、86%、63%。

3.2. 疗效

1年总生存率、盆腔局部控制率分别为100.0%、96.4%;2年总生存率、盆腔局部控制率分别为98.2%、96.4%,3年总生存率、盆腔局部控制率分别为94.6%、89.2%。不同期别生存率比较详见表1。

无盆腔淋巴结转移者(35例)3年总生存率为98.5%,有盆腔淋巴结转移者(21例)71.4% ($\chi^2 = 12.561, P = 0.01$)。脉管内见癌栓者(11例)3年总生存率、盆腔控制率分别为36.3%、60.6%;未见脉管癌栓者(45例)分别为94.5%、89.1% (χ^2 值分别为6.24、25.68, P值分别为0.012、0.000)。宫旁受累者(4例)中发生淋

巴结转移的比率为 75%，无宫旁受累者(52 例)为 36.5% ($\chi^2 = 13.26, P = 0.040$)。8 例复发[中位复发时间为 20.5 (12~30)个月]，其中远处转移 4 例；无复发者 48 例，其中远处转移 5 例($\chi^2 = 8.76, P = 0.002$)。9 例远处转移(占 16.1%)，其中最常见部位为肺转移(5 例)，其次为腹股沟及骨(4 例)。3 例死亡，其中 I 期 4 例、II 期 5 例。

3.3. 单因素分析

单因素分析显示临床分期、肿瘤侵犯深度超过 1/2、盆腔淋巴结转移、宫旁侵犯与总生存率相关，病理类型、盆腔淋巴结转移、脉管内见癌栓、宫旁侵犯与盆腔局部控制率相关。

3.4. 多因素分析

盆腔淋巴结转移及宫旁侵犯为总生存率的独立预后因素，临床分期及脉管癌栓为盆腔局部控制率的独立预后因素。Cox 回归模型多因素分析结果见表 2。

3.5. 相关毒副反应

远期直肠反应 1 级 26.8%、2 级 8.9%、3 级 1.7%；远期泌尿系反应 1 级 23.2%、2 级 5.3%、3 级 0%。远期血液学毒性 1 级 41.1%、2 级 30.3%、3 级 8.9%。

4. 结论

早期宫颈癌(ⅠB 期~ⅡA 期)患者的治疗模式现在已经基本成熟，患者在无手术禁忌证的情况下，首选手术治疗。对于术后是否行辅助治疗，一直是研究热点，国内外文献均进行了大量报道。自 1997 年 Choi [4] 等分析了 1985~1993 年期间 64 例接受不恰当的切除术后，进行放疗的早期宫颈癌患者存在高危复发危险

Table 1. Different other overall survival and pelvic local control rate (%)

表 1. 不同期别的总生存率和盆腔局部控制率比较(%)

临床分期	总生存率			盆腔局部控制率		
	1 年	2 年	3 年	1 年	2 年	3 年
I 期	100.0%	98.5%	95.2%	96.4%	88.5%	87.5%
II 期	98.2%	94.6%	94.6%	94.6%	89.2%	85.7%
χ^2 值		6.15			5.12	
P 值		0.027			0.016	

Table 2. The results of multivariate analysis of Cox regression model

表 2. Cox 回归模型多因素分析结果

因素	总生存率				盆腔局部控制率			
	β 值	SE 值	χ^2 值	P 值	β 值	SE 值	χ^2 值	P 值
临床分期	-2.13	1.62	2.96	0.763				
肿瘤侵犯浸润深度超过 1/2	-0.00	0.43	0.00	0.836				
盆腔淋巴结转移	-1.30	0.65	6.59	0.012	-0.56	0.81	0.36	0.689
宫旁侵犯	-0.41	0.78	0.21	0.076	-1.13	1.07	0.89	0.788
脉管癌栓					1.25	0.85	3.41	0.271
病理类型					0.35	0.75	0.66	0.199

因素, 应接受术后放射治疗。Koh 等[5]回顾大量文献后认为对于早期宫颈癌淋巴结阳性的患者, 与单独放疗相比, 结合辅助化疗和放疗显著提高了无瘤生存时间和总体生存时间; 淋巴结阴性但有其相关危险因素的患者, 与术后不接受进一步治疗相比, 辅以盆腔放疗显著提高无瘤生存时间。Sasaoka 等[6]分析了1986~1995年期间177例I~III期宫颈癌患者的病例资料, 认为接受联合适形放疗或后装放疗对提高生存率很重要。

本次回顾性研究经过多因素分析淋巴结转移是总生存率的独立预后因素, 淋巴结阳性者生存率及盆腔控制率明显低于淋巴结阴性者。文献[7] [8]报道 Ib 期、IIa 期术后病理淋巴结阴性及淋巴结阳性者的5年生存率分别为94.5%及33.3%、81.7%及48.7%, 70.2%及36.5%, 发生双侧或单侧多个淋巴结转移者预后更差。另外盆腔淋巴结转移数目及部位与预后相关, 术后盆腔放疗者中, 盆腔单一淋巴结转移者预后明显优于多发淋巴结转移者[9]。关于浸润深度超过1/2 本研究中虽然单因素分析时对总生存率有意义, 但多因素分析中无意义。浸润深度在较多的回顾性研究中亦是较重要的预后因素。浸润深度>1 cm 的病例, 无淋巴结转移、宫旁浸润、阳性手术切缘情况下能通过辅助放疗改善[10]。病理类型对预后影响尚有争议。有文献认为腺癌与较差预后相关[11] [12], 本研究的单因素分析中病理类型可影响盆腔局部控制率, 且是其独立预后因素。另有研究指出宫旁浸润、脉管癌栓者可得益于术后放疗[1] [13], 本次研究宫旁侵犯、脉管癌栓分别是影响总生存率、盆腔局部控制率的重要因素, 且也是独立预后因素。远期毒副反应均控制在3级以内, 且发生3级毒副反应患者占比不到10%。所以我们认为宫颈癌术后IMRT治疗在盆腔局部控制率及总生存率上能达到较满意疗效, 且放疗相关远期毒副反应是可接受的。

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