

李鹏,杨文君,陈志强,郭玉林,刘云,杨文静,李燕,杜奕.动态增强MRI诊断前列腺中央腺体癌和不同类型前列腺增生[J].中国医学影像技术,2013,29(6):962-966

动态增强MRI诊断前列腺中央腺体癌和不同类型前列腺增生

Dynamic contrast-enhanced MRI in diagnosis of central gland prostate cancer and benign prostatic hyperplasia

投稿时间: 2012-10-24 最后修改时间: 2013-04-15

DOI:

中文关键词: [前列腺肿瘤](#) [磁共振成像](#) [动态增强](#)

英文关键词: [Prostate neoplasms](#) [Magnetic resonance imaging](#) [Dynamic contrast enhancement](#)

基金项目:宁夏自然科学基金(NZ09110、NZ1234)。

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中文摘要:

目的 探讨3.0T LAVA多期动态增强扫描对前列腺中央腺体癌(CGPCa)和不同类型前列腺增生(BPH)的诊断价值。方法 回顾性分析经病理证实的34例CGPCa(CGPCa组)和70例BPH(BPH组)患者的MRI、动态增强MRI(DCE-MRI)资料,分析T2WI和动态增强表现,将信号强度-时间(SI-T)曲线分为速升下降型、速升平台型、缓升平台型和持续缓升型,并对前3种曲线计算达峰时间(T_{max})、最大强化程度(SI_{max})和最快强化率(R_{max}),比较两组患者SI-T曲线类型及 T_{max} 、 SI_{max} 、 R_{max} 的差异。结果 CGPCa组SI-T曲线以速升下降型和速升平台型为主;BPH组中基质增生为主型(sBPH)SI-T曲线类型与CGPCa类似;腺体增生为主型(gBPH)以持续缓升型多见;混合型增生(mBPH)四种曲线均可见,但以持续缓升型最多。CGPCa组、sBPH亚组、mBPH亚组、gBPH亚组间SI-T曲线类型的差异有统计学意义($P<0.01$),但CGPCa组与sBPH亚组的差异无统计学意义($P>0.05$),CGPCa组与gBPH亚组、mBPH亚组的差异均有统计学意义($P<0.01$)。CGPCa组、sBPH亚组和mBPH亚组间 T_{max} 、 SI_{max} 、 R_{max} 的差异均有统计学意义($P<0.05$),但CGPCa组和sBPH亚组间 T_{max} 、 SI_{max} 、 R_{max} 存在较明显的重叠。结论 3.0T LAVA多期动态增强扫描SI-T曲线有助于CGPCa与gBPH、mBPH的鉴别诊断。 T_{max} 、 SI_{max} 、 R_{max} 对CGPCa和sBPH、mBPH具有一定鉴别诊断价值。

英文摘要:

Objective To explore the value of 3.0T liver acquisition with volume acceleration (LAVA) dynamic contrast-enhanced MRI (DCE-MRI) in the diagnosis of central gland prostate cancer (CGPCa) and benign prostatic hyperplasia (BPH). **Methods** MRI and DCE-MRI data of 34 patients with CGPCa (CGPCa group) and 70 patients with BPH (BPH group) proved by pathology were analyzed retrospectively. By analyzing the characteristics of T2WI and DCE-MRI, the styles of the signal intensity-time curve (SI-T) were defined as rapidly ascending followed with descending curve, rapidly ascending followed with plateau curve, slowly ascending followed with plateau curve and persistently and slowly ascending curve. Time to minimum (T_{max}), whole enhancement degree (SI_{max}) and maximum slope (R_{max}) of the first three curve were calculated, and the differences of SI-T curve type and T_{max} , SI_{max} and R_{max} between the two groups were compared. **Results** The most common styles of SI-T curve in CGPCa group were rapidly ascending followed with descending curve and rapidly ascending followed with plateau curve. The stromal BPH (sBPH) subgroup was similar as CGPCa group. The most common style of SI-T curve in glandular BPH (gBPH) subgroup was persistently and slowly ascending curve. The 4 kinds of curves were visible in the mixture BPH (mBPH) subgroup, but the persistently and slowly ascending curve was most common. The differences of SI-T curve styles among CGPCa group, sBPH subgroup, mBPH subgroup and gBPH subgroup were statistically significant ($P<0.01$), but that between CGPCa group and sBPH subgroup was not significant ($P>0.05$), whereas those between CGPCa group and gBPH subgroup, mBPH subgroup were statistically significant, respectively (both $P<0.01$). The differences of T_{max} , SI_{max} and R_{max} among CGPCa group, sBPH subgroup and mBPH subgroup were also significant (all $P<0.05$), but the value in CGPCa group and sBPH subgroup was overlapped. **Conclusion** The style of SI-T curve of 3.0T LAVA DCE-MRI is helpful to diagnose CGPCa, gBPH and mBPH. T_{max} , SI_{max} and R_{max} play certain role in the differential diagnosis of CGPCa, sBPH and mBPH.

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