Research progress in imaging diagnosis of fatty liver

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【fattyliver】

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, CT MRI ,
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Abstract Fatty liver (fattyliver) is the excessive accumulation of fat in the liver caused by various reasons. If the early intervention is not timely, it can develop into liver cirrhosis and even death. Due to the lack of specific manifestations in the early stage of fatty liver disease, it is impossible to correctly diagnose and judge the degree of the disease in the early stage. Although biopsy is the gold standard for diagnosing this disease, it cannot be popularized because of its trauma and poor patient compliance. With the development of medical imaging technology and the clinical application of ultrasound, CT, MRI and other technologies, the sensitivity and specificity of early diagnosis of fatty liver have been continuously improved. This paper reviews the exploration of quantitative determination of fatty liver in recent years, and provides a reliable diagnostic evaluation method for early clinical diagnosis and evaluation of curative effect after systematic treatment.

Key words fatty liver; ultrasonography; tomography; X−ray computed; magnetic resonance imaging

0

In In (In
. K K ,),
.
K ,
K K Z ,
K ,
. K .

K **2 CT**
K K K CT K CT
Z CT K CT CT
K K
CT ≤1 K
K CT 0.7~1 K0.5~0.7
K≤0.5 Pamilo CT

1 52HU【39~60HU】 27HU【4~46HU】 10HU【−6~
19HU】 KCT K
B K CT
Z CT
K [8]K
K CT K
K CT
K K KCT
34.5%K K Z CT K
CT [7] CT

,

, (VP),

VP CT , VP

CT ,

CT VP (Y=−121X+7115),

CT VP , ,

VP CT CT

, : CT 591~470HU

,47~349HU , 349HU

, CT

, , CT

, ,

CT ,

CT [8],Pamilo [9] 24

CT : CT 52HU(39~60HU),

CT 27HU(4~46HU),

CT 10HU(−6~19HU) [10] 28

, CT

, CT

659%, − 931%,

CT , CT

3

K

G 1H−MRSH

K [9~10]

MRS K K K

K

Dixon MR

1984 Dixon

K

K

G inphase,IPH G outphase,OPH

G inphase,IPH K

G SIIpH G SIwH G SIfH

K SIIp=SIw+SIf 180° K

G outphase,OPH K G SIopH

G SIwH G SIfH K SIop=SIw−SIf

G fatfraction,FFH FF=G SIIp−SIopH/2SIIP

MRI K K

Dixon

K

4 T1WIY

Dixon

T1 T2* K T2* K

Dixon FF FF

[10]

G r=0.54~

0.85HK K

]

G r=0.47H MRSG r=0.77H Dixon FF

K

T2* K K

K

3.0TMR Dixon T2*

K K

YIP1−OP−OP2K IP1−OP2 T2*

K YFF G SIIp −

SIopH/2SIIP K SIIp =SIIP×e G−ΔTE/T2*HKΔTE=

TEIP1−TEIP2KT2*=−2ΔTE/InG SIIP2/SIIP1H K

K T2*

K K

K K

K

K K

K

MRI [13] ,

SE T2WI 24

MRI , MRI

T1 T2 , T2 (

TR), VP ,

: T2 , VP

,T2 ,

(r=079,t=479,P<0001),T2 (Y) VP

(X) Y=119X+1525;

10%,T2 12ms VP

T2 :T2

27~39ms ,39~51ms ,51ms

MaryE.Rinella [14]

,

, 084; 02

, 15%

MRI

MR (DWI)

,

, [15]

(ADC) 127

, ADC

(137032)X10−3mm2/s,

ADC (P<005), ,

, /

,

4

K KB

K ZCT

K　　　　　　　　K　　　　　　　　　　　MRI　　　　　K
　　　　Z　　　　　　　CT　　　K

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