

Pankreatická elastáza

O správnosti tohoto článku se vede polemika - blíže v diskusi

Elastáza-1 (EC 3.4.21.11) je secernována jako proelastáza a aktivována trypsinem. Rozlišujeme elastázu-1 (Mr 30000; anodická frakce), která se vyskytuje v séru ve volné formě a v komplexu s α_1 -proteinázovým inhibitorem, a elastázu-2 (Mr 25000; katodická frakce). Enzym je secernován pankreatickou šťávou do duodena a během střevní pasáže není degradována proteinová sekvence zvolená pro immunochemickou detekci. Při zánětlivých procesech dochází také k retrogradnímu uvolnění do krevního oběhu a kvantifikace sérové hladiny lidské pankreatické elastázy je vhodným markerem akutní pankreatitidy, např. post-ERCP, a karcinomu pankreatu. Elastáza-1 (stanovená ELISA technikou) má ze všech pankreatických enzymů pro karcinom pankreatu nejvyšší specifitu i senzitivitu. Hladina elastázy-1 je zvýšena u akutní i chronické recidivující pankreatitidy, přičemž zvýšení přetrvává déle a lépe koreluje s klinickým stavem než hladina α -amylázy. Ke stanovení elastázy-1 se používá RIA metody se ^{125}I -značenou elastázou nebo novějších ELISA technik s monoklonální protilátkou k elastáze-1. Elastáza-1 (stanovená ELISA technikou) má ze všech pankreatických enzymů pro karcinom pankreatu nejvyšší specifitu i senzitivitu. Referenční rozmezí (pro RIA metodiku) je 1.3–4.3 $\mu\text{g/l}$. Nejnovější studie stanovení sérové elastázy 1 je založena na latexové immunoassay.



Markery akutní pankreatitidy

Stanovení elastázy-1 (EL-1) ve stolici

Lidská pankreatická elastáza 1 je syntetizována acinárními buňkami pankreatu. Enzym je secernován pankreatickou šťávou do duodena a během střevní pasáže není degradována proteinová sekvence zvolená pro immunochemickou detekci. Stanovení elastázy vykazuje proto vyšší dg. přínos, na rozdíl od chromogenní metody stanovení chymotrypsinu ve stolici, význam nemá ani stanovení lipázy ve stolici. Aktivita lidské pankreatické elastázy 1 ve vzorcích stolice odráží míru exokrinní pankreatické funkce. Nejnovější aplikace doporučují stanovení pankreatické elastázy-1 v duodenální šťávě při stimulovaném funkčním testu. Klinický význam má stanovení elastázy-1 ve stolici v diferenciální diagnostice malabsorpčního syndromu, jako screeningový test onemocnění pankreatu a pro dlouhodobé sledování nemocných s chronickou pankreatitidou.

Laboratorní metoda je založena na imunologickém průkazu ELISA metodou s monoklonální (nebo polyklonální) protilátkou k lidské, pankreatické elastáze. Vzorek stolice je v laboratoři homogenizován v extrakčním nárazníkovém roztoku a po ředění 1:500 dále zpracován běžným ELISA postupem na mikrotitrační destičce s detekcí pomocí POD-streptavidinu. Souprava obsahuje 5 kalibračních standardů v rozmezí 0.3–10.0 ng/ml.

Referenční hodnoty jsou 200–500 $\mu\text{g/g}$ stolice, hraniční pásmo je 100–200 $\mu\text{g/g}$, závažná pankreatická insuficience je stanovena při hodnotách < 100 $\mu\text{g/g}$ stolice. Imunochemické stanovení elastázy-1 není ovlivněno pasáží tlustým stěvem, substituční terapií ani jinými faktory, které ovlivňují enzymové stanovení chymotrypsinu ve stolici. Specifita metody je 93%, senzitivita dosahuje pro těžkou pankreatickou insuficienci hodnoty 100%, pro střední a lehké formy 87%. Tento test je běžně používán v pediatrii k průkazu cystické fibrózy se specifitou i senzitivitou téměř 100%. Falešná snížená hodnota může být způsobena zředěním (obsahem vody) při průjmu.



Stanovení elastázy-1 (EL-1) ve stolici



Stanovení elastázy ve stolici

Odkazy

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