Samonella typhl vi antigens possible cross reactive antigeic epitopes with othrs from brucella species and shigella species

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Enteric fever remains a major problem in developing countries It is believed that in salmonella species their core structure whichshows serological cross-reactivity with some members of theEnterobacteriaceae. Several factors are observed in determining thepathogenesis of Salmonella in causing enteric fever.In this study 10 (23.8%) from 42 clinically suspected cases oftyphoid fever had positive blood culture for S. tY12hi. Four strainsshowed a strong positive reaction for Vi antigen as shown by ELISA.SDS-PAGE and sliver stain were done to characterize separatedbands at different moleuclar weight. Immunoblotting of testedBrucella abortus, Brucella melitensis antisera and Shigella differentantisera showed that there is no cross reactivity with specific bands forVi antisera with Brucella abortus and Brucella melitensis while thereis a cross reaction with shigella sonnei phase I & 2 antisera at 2 bands(34, less than 10 KDa).Shigella bodydii polyvalent 1,2,3 showed a cross reaction at oneband (less than 10 KDa). No bands cross react with shigellaDysenteriae polyvalent (3-10) or with shigella f1exneri polyvalent (1-6xay).SDS-PAGE and silver stain were done for crude LPS antigen ofS. Whi to characterize bands at different moluclar weights.Immunoblotting of tested Brucella abortus and Brucellamelitensis against LPS antigen of S.!Y1illi there is no cross reactivity.With shigella sonnei 2 bands at 80, 60 KDa showed cross reactivitywith LPS of S. typhi and also shigella boydii polyvalent 1,2,3 andshigella flexneri polyvalent (1-6, x & y). With Shigella dysenteriaethere is no cross reactivity with LPS of S. typhi. A key pathogenicmechanism of S. !Y1illiis their ability to invade the cells of intestinalepithelium. Also, a cytotoxin production may play a role inpathogenesis of s.. !Y1illi.All strains of S. typhi III this study showed invasive powerranged between 1 to 12%; when tested on Henle 407 human intestinalcell lines. This confirm the invasiveness role in the pathogenesis of S.!Y1illi.2 strains of s... typhi in this study showed a degree ofmorphological changes of Henle 407 cell lines with the invertedmicroscope; there was a partial detachment of monocell layer withdilution 1/10, 1/50, while the other strains of S. typhi showed intactcell monolayer in most of the wells. These results may suggest theproduction of cytotoxin in some strains. These coincides with previousstudies that stated that the s..!Y1illi produce cytotoxin.Thus from the aforementioned review, it can be concluded that:1- There is no cross reactivity between Vi and LPS antigens of S.typhi and Brucella abortus and Brucella melitensis antisera andshigella

dyesenteriae polyvalent antisera.2- There is no cross reactivity between Vi antigen of S. typhi andshigella flexneri polyvalent (1-6, x & y) antisera.3- There is cross reactivity between Vi and LPS antigens of S. typhiand shigella Sonnei (phase 1&2) antisera and to lesser extent withshigella boydii polyvalent 1,2,3, antisera.4- There is cross reactivity between LPS antigen of S. typhi andShigella flexneri polyvalent (1-6, x &y) antisera.5- Invasivness of S. typhi playa major role and the Key inpathogenesis rather than toxin production which may playa rolealso in pathogenesis of S· b'Jilli.Recommendation:1- Use sodium dodecyl sulfate-gel electrophoresis (SDS-PAGE) toseparated different antigenic preparations into bands of definitemoleuclar weights and can be transfered to nitrocellulose sheetsand use of silver stain to detect LPS and protien in thesepreparations.2- Immunoblotting technique can be used to detect differentantibodies in antisera raised against bacteria of gram-negativebacilli and its use to detect cross reactions with otherEnterobacteriaecae.3- More studies about the toxin production of S· b'Jilli must be done toevaluate more data about its role in the pathogenesis of typhoidfever.