Hkkjrh; df"k vul/kku if=dk] **35**(3): 189-192 DOI: 10.18805/BKAP239

lykTek ftd dlV'ku i#"k foLVkj pgk ij tLrk ijdrk dk çHkko

tuV dkj] tkukyh noh*] dey ljek ,o fnC;n pØorh

i'k fpfdRlk tho foKku vkj to jlk;u foKku foHkkx] i'k fpfdRlk foKku vkj i'kikyu ldk;]
—f"k foKku vkj çk|kfxdh fo'ofo|ky; 'kj,&d'ehj] vkj-,l-ijk&181 102] tEEk

ikIr% vDrcj 2020 Lohdr% vDrcj 2020

lkjk'k

v/;;u 4 l 12 llrkg dh me d 8 llrkg d fy, 72 ohuj foLVkj uj pgk ij fd;k x;k Fkk vkj mUg fu;=.k d :i e 3 legk e foHkkftr fd;k x;k Fkk% pgk dk tLrk ijd d fcuk vkgkj f[kyk;k x;k] T_1 vkj T_2% pgk dk tLrk lYQV @ 50mg vkj ;ä vkgkj f[kyk;k x;k Øe'k% 100mg/kg 'kjhj dk otu@fnuA jä d ueu 6] 8] 10 vkj 12 llrkg e ,d= fd, x, Fk vkj lykTek e ftd dh ek=k dk vueku yxk;k x;k FkkA nkuk mipkj legk e] T_1 vkj T_2 u c<rh me d lkFk lykTek ftd d Lrj dh c<rh çofÙk dk fn[kk;k vkj eku dkQh fHkUu Fk ¼P <0.01½A lykTek tLrk lkærk u vk; dh mUufr d lkFk fu;=.k leg e dkb fo'k"k #>ku ugh fn[kk;kA vR;f/kd mPprj ¼P <0.01½ T_1 eY;k dk 8 l 12 llrkg dh vk; d fu;=.k eY;k dh ryuk e nt fd;k x;kA T_2 leg e] 6 l 12 llrkg dh vk; rd eku dkQh vf/kd ik;k x;k ¼P <0.01½A mipkj legk d chp ryuk e] T_2 dk Lrj 8 l 12 llrkg rd T_1 dh ryuk e dkQh vf/kd ¼P <0.01½ ik;k x;kA oreku v/;;u l irk pyk g fd i#"k foLQkVd pg d fodkl dh vof/k d nkjku lykTek tLrk ,dkxrk ftd ijdrk vkj @50mg@kg l çHkkfor Fkk ftd ijdrk @100mg/kg 'kjhj d otu@fnu dh ryuk e cgrj ifj.kke FkkA

'kCn dth% lykTek tLrk] foLVj pgk] tLrk ijdrkA

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Effect of zinc supplementation on plasma zinc concentrationin male wistar rats

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ABSTRACT

The study was conducted on 72 weaned Wistar male rats for 8 weeks from 4 to 12 weeks of age and they were divided into 3 groups as control: rats fed diet without zinc supplementation, T_1 and T_2: rats fed diet containing zinc sulphate @ 50mg and 100mg/kg body weight/day, respectively. Blood samples were collected on 6, 8, 10 and 12 weeks of zinc supplementation and zinc concentration in plasma was estimated. In both the treatment groups, T_1 and T_2 showed an increasing trend of plasma zinc levels with advancing age and the values were differ significantly (P<0.01). Plasma zinc concentration showed no particular trend in control group with advancement of age.Significantly higher (P<0.01) T_1 values recorded as compared to control values from 8 to 12 weeks of age. In T_2 group, the values found significantly higher (P<0.01) from 6 to 12 weeks of age. Comparing between treatment groups, T_2 levels were found significantly higher (P<0.01) than those of T_1 from 8 to 12 weeks. Present study revealed that plasma zinc concentration during growth period of male wister rat was affected by zinc supplementation and zinc @ 50 mg/kg had better result than zinc supplementation @100 mg/kg body weight/day.

Key words: Plasma zinc, Wistar rat, Zinc supplementation

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[kfutk u ekuo vkj tkuojk nkuk e cge[kh [kk| ?kVd vkj LoLFk çekVj gku d dkj.k of'od Qkdl çkIr fd;k g] D;kfd o 'kjhj e db 'kkjhfjd] ikpu vkj tol'y"kd çfØ;kvk e 'kkfey gA Vl [kfutk e] uj çtuu e tLrk dh Hkfedk db n'kdk l [kkth xb gA tkpdrkvk] yfdu vHkh rd dN fooknk dk mtkxj dju d fy,A gkykfd] 'kØk.ktuu ¼Mfol] 1985½] 'kØk.k xfr'khyrk ¼,Mjlu ,V vy] 1993½ vkj vkdkfjdh ¼lykx ,V vy] 2005½ vkj mud p;kip;] i#"k d Vîcyj lko e vkgkj e dkcfud ;k vdkcfud :i l tLrk dh egRoi.k Hkfedk gkeku vkfn dk vPNh rjg l çyf[kr fd;k x;k g vkj ck;kekdj ¼gfEct] 2003½ d :i e mud mi;kx d fy, çfjr fd;k x;k gA ftd 'kjhj e 0;kid :i l tekugh gkrk g] blfy, vkgkj e bldh vkifr fujrj gkuh pkfg,A feêh&ik/k&ç.kkyh d ek/;e l Hkkjr d db fgLlk e feêh e [kfutk dh fof'k"V deh çpfyr g vkj bll i'kvk e [kfut dh deh gkrh gA tEe {k= e Hkh] dN {k=k e tLrk dh deh gk ldrh g] bld fofHkUu ftyk e Hkkxkfyd vkj tyok; fofo/krkvk d dkj.kA bu lHkh fopkjk dk /;ku e j[kr g,] lykTek e tLrk d Lrj e nk vyx&vyx [kjkd e tLrk ijdrk d çHkko dk n[ku d fy, oreku tkp i#"k foLVkj pgk e vk;kftr dh xb FkhA

lkexh ,o ijh{k.k fof/k

;g v/;;u oVujh fQft;ky,th vkj ck;kdfeLVh d çHkkx e vk;kftr fd;k x;k Fkk] i'k fpfdRlk foKku vkj i'kikyu ldk;] SKUAST&Jammu, R-S-Pura 72 l 12 llrkg dh 8 l 12 llrkg dh vof/k d fy, 72 ofpr LoLFk foLrj uj pgk ijA pgk dk bfM;u bLVhVîV v,Q bVhxfVo efMflu] lh,lvkbvkj ç;kx'kkyk] tEe] tEe vkj d'ehj l exok;k x;k FkkA mUg ekud iyVM jk'ku vkj LoPN i;ty foKkiu fyfcVe çnku fd;k x;k vkj ekud çc/ku 'krk d rgr cuk, j[kk x;kA ç;kx 'k: dju l igy] pgk dk ,d llrkg dh vof/k d fy, ç;kx'kkyk dh fLFkfr;k e foHkkftr fd;k x;k FkkA mUg fu;=.k d :i e rhu legk e foHkkftr fd;k x;k Fkk& pgk dk tLrk ijdrk d fcuk vkgkj f[kyk;k x;k] T_1 vkj T_1 legk dk Øe'kh tLrk lYQV @50mg@kg 'kjhj d otu@ fnu vkj 100 mg@kg 'kjhj d otu@nk dk f[kyk;k x;kA lHkh çk;kfxd tkuojk dk v/;;u dh ijh vof/k d nkjku fujrj voykdu d rgr j[kk x;k FkkA ck< d ueuk dk ,Vhdkvkxyv gifju @ 10 IU/ml jä oky aliquots e ,d= fd;k x;k Fkk vkj 15 feuV d fy, 3000 rpm ij centrifuged fd;k x;k FkkA lykTek dk lkQ ck> dkp ijh{k.k Vîck e dkVk x;k Fkk vkj to jklk;fud fo'y"k.k d fy, rjr &20°C ij lxghr fd;k x;k FkkA lykTek ftd d vkdyu d fy,] fQd ,V vy }kjk crkb xb fof/k d vulkj ,d= fd, x, lykTek ueuk l ,fydkVl r;kj fd, x, FkA Fick *et al.*(1979½ vkj bld ckn] mUg ikyjkbTM fteu ,V,fed ,c,'ku LiDVkQkVkehVj ¼Hitachi; Z-2300½ dh enn l tLrk d vkdyu d v/khu fd;k x;kA ç;kx e lHkh n[k x, vkdMk d fy,] LuMdkj vkj dkpju ½2004½ }kjk vu'kflr ekud lkf[;dh; çfØ;kvk dk ikyu fd;k x;k gA ek/; vkj ekud =fV fn[kk dj MVk çLrr fd;k x;kA v/;;u fd, x, fofHkUu ekinMk d fy, eY;k d egRoi.k vrj dk vkdyu MVk d vk/kkj ij fHkUurk d ,d rjQk vkj nk rjQk fo'y"k.k }kjk fd;k x;kA fofHkUu legk vkj llrkgk d egRoi.k ekuk dh x.kuk rdh d ijh{k.k }kjk dh xb FkhA mijkä lHkh x.kuk SPSS l,¶Vo;j lLdj.k 16-0 dk mi;kx djd dh xb FkhA

ifj.kke ,o foopuk

rkfydk 1 e n'kk;k x;k g fd nkuk mipkj legk] T_1 vkj T_2 e] lykTek tLrk lkærk u c<rh me d lkFk ,d c<rh çofÙk fn[kkb vkj eY;k e dkQh vrj vk;k ¼P <0.01½A 8 l 12 llrkg dh vk; d fu;=.k eY;k dh ryuk e mYy[kuh; :i l mPp ¼P <0.01½ T_1 eku nt fd, x, gA T_2 leg e] 6 l 12 llrkg dh vk; rd eku dkQh vf/kd ik;k x;k ¼P <0.01½A oreku fu"d"kk d vulkj] pgk vkj vU; v/;;uk e ijd tLrk d tokc e lhje ;k lykTek tLrk lkærk e of) gb¼vMyk,yV vy(2011] dekj ,V vy(2013(vkelV vy(2015½A Skalny et al. ½2015½ u 7 vkj 14 fnuk d fy, vYidkfyd tLrk ijdrk @5mg vkj 15mg@kg 'kjhj d otu dk Hkh v/;;u fd;k vkj bld ifj.kkeLo:i fu;=.k dh ryuk e ,d lcf/kr 35 vkj 45% vkj 55 vkj 107% lhje tLrk Lrj e of) gbA okLro e] ftd dh deh oky leg e tLrk ijdrk d ifj.kkeLo:i lhje ½xlrk ,V vy(1989½ e [kfut Lrj e l/kkj gvkA blfy,] igy n'kk, x, fu"d"k bl rF; d fy, çklfxd Fk fd lhje tLrk lkærk vkgkj tLrk dh fLFkfr ¼dkuxV vy(1993½ l lcf/kr FkhA D;kfd vkgkj e tLrk dh deh d dkj.k tLrk ¼,y gMu ,V vy] 2001½ d de lhje Lrj dk urRo fd;k x;k Fkk; vke,V vy(2015½A [kjxk'k e de tLrk dh deh oky vkgkj ¼cVh vkj xc] 1991½ f[kyku d nk llrkg

rkfydk 1% ftd ijdrk d ckn uj foLVj pgk e lykTek tLrk (µmol/L)

leg	g¶rk e me			
	6	8	10	12
fu;=.k	14.68^{aA}±0.38	15.48^{aA}±0.58	15.52^{aA}±0.25	14.82^{aA}±0.14
mipkj ¼T_1½	16.70^{aAB}±0.35	18.81^{aB}±0.31	21.90^{bB}±0.91	26.93^{cB}±0.87
mipkj ¼T_2½	17.59^{aB}±0.43	23.35^{bC}±1.03	28.68^{cC}±1.23	37.15^{dC}±0.84

,d] ch] lh] Mh llrkg e me d chp legk d chp egRoi.k vrj dk o.ku djrk gA
,] ch] lh leg d chp d g¶rk e me d Hkhrj egRoi.k vrj dk o.ku djrk g

d ckn lhje tLrk ,dkxrk fupy Lrj ij igp x;kA xlrk ,V vy] ¼1997½ u crk;k fd tc 45 fnuk dh vof/k e 1-03µg Zn / kg 'kjhj d otu oky vkgkj ij f[kyk, tku oky fxuh&fix e çk;kfxd :i l tLrk dh deh mRiUu gb] rk 20 fnuk l tLrk dh lhje lkærk e dkQh deh vkbA gkykfd] pk ,V vy] ¼2007½ u ik;k fd vkgkj tLrk e ftxj] ekl if'k;k vkj xn t l Ård k e tLrk ,dkxrk dk çHkkfor ugh fd;kA

oreku v/;;u l irk pyk g fd lykTek tLrk lkærk u me d c<u d lkFk fu;=.k leg e dkb fo'k"k #>ku ugh fn[kk;kA gkykfd] Kalita *et al.* ¼2006½ u crk;k fd ftd l mipkfjr vle {k= d igkMh {k=k dh LFkkuh; cdfj;k e lhje e mPp tLrk lkærk Fkh tk fd me d c<u d lkFk c< tkrh g tk fd çtkfr;k d vrj] fofHkUu Hk{k.k dh vknrk] tyok; ifjoru vkfn d dkj.k gk ldrh gA

lnHk

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