

7ULSOH \$QWLWKURPERWLF 7KHUDES\ LQ 3DWLH
3&, \$GHTXDWL 7LPH LQ 7KHUDESXWLF ,15 5D

+LURND]X .RQ.DWKLXPL .RQ.DWKLXPL LUR\XNL 'DLGD
'HSDUWPHQW RI &DUGLRORJ\ -XQWHQGR 8QLYHUVLW\ 6KL]XRND +RVSLWDO 6KL]XRND -DSDQ
'HSDUWPHQW RI &DUGLRORJ\ -XQWHQGR 8QLYHUVLW\ 6FKRRO RI 0HGLFLQH 7RN\ -DSDQ
&RUUHVSRRGLQ.DWKLXPL\DXFKL 'HSDUWPHQW RI &DUGLRORJ\ -XQWHQGR 8QLYHUVLW\ 6FKRRO RI 0HGLFLQH
)D[NWDLO#PHG MXQWHQGR DF MS

5HFHLYHG\$SDWQ \$FFHSWHG0GDWH 3XEOLVKHG GDWH 0D\
&RSULJKW .RQLVKL + HW DO 7KLV LV DQ RSHQ DFFHVV DUWLFOH GLVWULEXWHG XQGHU WKH WHUPV R
XVH GLVWULEXWLRQ DQG UHSURGXFWRQ LQ DQ\ PHGLXP SURYLGHG WKH RULJLQDO DXWKRU DQG VRXU
0LQL 5HYLHZ

'XDO DQWL SODWHOHW WKHUES\ '\$37 LV D VWDQGDUG SURFHGXUH IRU
SDWLHQWV XQGHUJRLQJ SHUFXWDQHRXV FRURQDU\ LQWHUYHQWLRQ 3&, XVLQJ
VWHQWV > @ ZKHUHV RUDO DQWLFRDJXODWLRQ 2\$& LV QHFHVVDU\ ZKHQ
&+\$'69\$6F VFRUHV DUH^a WR UHGXFH VWURNH DQG HPEROLF HYHQWV LQ
SDWLHQWV }ZLWK 0DWHU@ &RURQDU\ DUWHU\ GLVHDVH
&\$' DQGHORH[LVWV LQ VDPH SDWLHQW DSSUR[LPDWHO\ RI
SDWLHQWV ZKR XQGHUZHQW 3&, KDYH \$) > @ 6RPH VWXGLHV KDYH
UHSRUWHG WKDW '\$37 ZLWK 2\$& WULSOH DQWLWKURPERWLF WKHUES\ >77@
UHGXFHV PDMRU FDUGLRYDVFXODU HYHQWV DQG PRUWOLW\ FRPSDUHG ZLWK
'\$37 RQO\ LQ SDWLHQWV ZKR XQGHUZHQW 3&, ZLWK \$) > @ 2Q WKH
RWKHU KDQG RWKHU KDYH IRXQG WKDW 77 LQFUHDVHV WKH EOHHGLQJ DQG
FDUGLRYDVFXODUHHFHQW >RSW@ FRPELQDWLRQ
DQWLWKURPERWLF WKHUES\ IRU WKH SDWLHQWV ZLWK \$) XQGHUJRLQJ 3&, LV
XQFHUWDLQ

H \$PHULFDQ &ROOHJH RI &KHW 3K\VLFLDQV \$&&3 JXLGHOLQHV
UHFRRPHQGHG 77 HJ 2\$& DVSLULQ DQG FORSLGRJUHO IRU SDWLHQWV ZLWK
\$) &+\$'6VFRUH RI RU JUHDWHU ZKR XQGHUJRLQJ 3&, GXULQJ WKH
>UFRQDWH\SDDFHPHQW RI D \$DUWHWFRHWDQWQWV RU
DVHSDDFHPHQW RI D \$UWHWFRHWDQWQWV LQVWURJ RI 77
2\$& SOXV D VLQJOH DQWLSODWHOHW GUXJ LV UHFRRPHQGHG \$W PRQWV
DVHSD, 2\$& DORQH LV VXJJHVWHG DV IRU SDWLHQWV ZLWK \$) DQG &\$'
*UDGH & H> @ (XURSHDQ 6RFLHW\ RI &DUGLRORJ\ (6&
JXLGHOLQHV UHFRRPHQGHG 3& JXLGHOLQHV
&\$' DQG DFXWH FRURQDU\ \IQGURPH ZLWK KLJK EOHHGLQJ ULVN RU
PRQWV, DFXWH FRURQDU\ \IQGURPH ZLWK ORZ EOHHGLQJ ULVN
\$VHWKDW UHFRRPHQGDWLRQ RI DQWLWKURPERWLF WKHUES\ ZDV VDPH DV WKH
\$&&3 JXLGHOLQHV FODVV ,,D HYLGHQFH OHYHO % RU & > @ :KHQ D
GLUHFWRU RUDO DQWLFRDJXODQW '2\$& LV XVHG DV IRU 2\$& WKH FRQVHQVXV
UHFRRPHQGDWLRQ LVHWKDWLWVORZHVSUFRQWLRQ
LQ \$) VKRXOG EH FRQVLGHUHG

5HFHQWO\ '2\$& LV EURDGO\ XVHG DV IRU 2\$& LQVWHDG RI YLWDPLQ .
DQWDRQLVP 9.\$ LQ SDWLHQWV ZLWK \$) DQG YHQRXV WKURPERHPEROLVP
+RZHYHU WKH SDWLHQWV RI FKURQLF NLGQH\ GLVHDVH KLJK DJH DQG OHDQ GR
QRW KDYH WKH DGDSWDWLRQ RI '2\$& \$PRQJ WKH SDWLHQWV ZLWK \$) ZKR
XQGHUJRLQJ 3&, WKH SDWLHQWV ZKR GR QRW KDYH WKH DGDSWDWLRQ RI
'2\$& DUH QRW D OLWWHO DQG WKHVH SDWLHQWV QHGH WR XVH 9.\$ DV IRU 2\$&
'HUHREH RI FULWLFDO LVVXH RI 77 LV VWLOO XQFOHDU UHJDUGLQJ
DSSURSULDWH UDQJH RI LQWHUQDWLRQDO QRUPDOLJHG UDWLR RI SURWKURPEL
WLP 37 ,15 ,Q SDWLHQWV ZKR UHFHLYH 77 WKH UHFRRPHQGHG UDQJH
IRU WKH 37 ,15 YDULHV EHWZHHQ DQG LQ WKH (6& JXLGHOLQHV FODVV
,,D HYLGHQFH OHYHO & > @ DQG EHWZHHQ DQG LQ WKH \$&&3
JXLGHOLQHV JUDGH & > @ +RZHYHU D 37 ,15 YDOXH XVLQJ 77 KDV QRW
EHHQ HVWDEOLVKHG \$Q RSHQ ODEHO PXOWLFHQWHU UDQGRPLJHG FRQWUROO
WULDO :2(67 WULDO Æ€HYHU HHQ@Æ€ UDQGRKH%`0qp

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