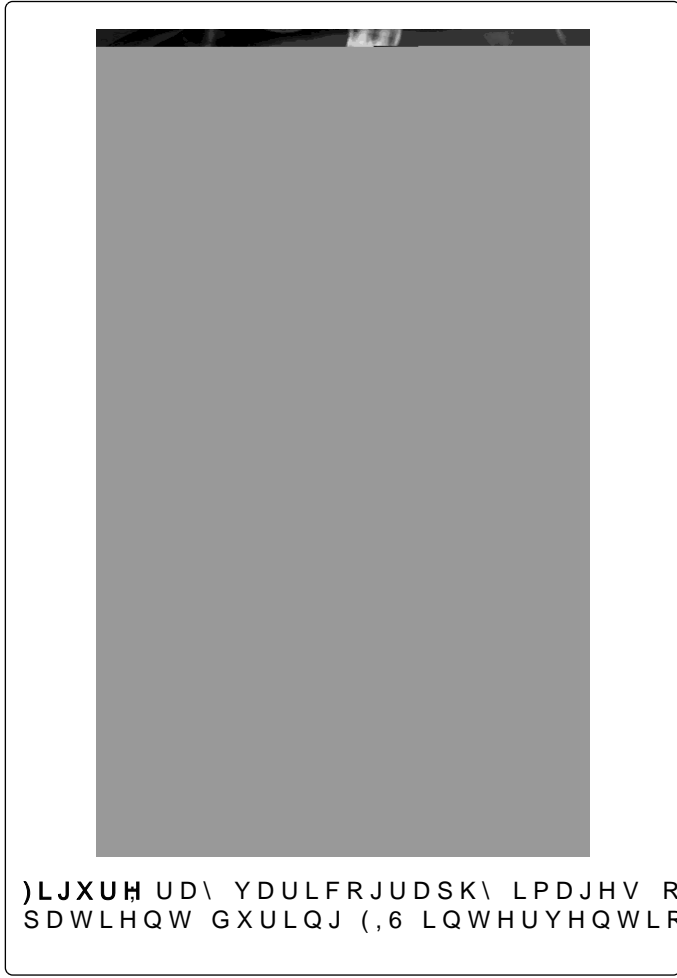


/RQJ WHUP 5HVXOWV RI 5DGLRORJLFD00\ \*XLC  
IRU (VRSKDJHDO 9DULFHDO %OHHGLQJ \$ 5HW

+LURDNL ,~~0DVB~~DNL 6KLPDGD~~UDR~~~~REB~~~~0X~~ 0DVD\XNL 2NH\D 1REXPLWVX 5\XJH <XLFKL .LGD 0DVD\D (VDNL %  
'HSDUWPHQW RI \*DVWURHQWHURORJ\ DQG 5DGLRORJ\ 1DWLRQDO +RVSLWDO 2UJDQLJDWLRQ 1DJR\D 0HGL  
&RUUHVSRRGLQJ~~LD~~~~DR~~~~W~~~~K~~~~R~~~~U~~~~Z~~~~D~~~~V~~H 'HSDUWPHQW RI \*DVWURHQWHURORJ\ 1DWLRQDO +RVSLWDO 2UJDQLJDWLRQ  
-DSDQ 7HO )D[ LZDVH(~~K~~~~R~~~~D~~~~L~~~~O~~K KRVS JR MS  
5HFHLYHG GDWH \$~~S~~~~B~~HSWHG GDWH 1RY 1~~R~~~~X~~EOLVKHG GDWH

JDXJH QHHGOH 1HHGOH YHQHSXQFWXUH ZDV GRQH FDUHIXOO\ WR DYRLG  
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WLVVXHV WKH LQMHFWRQ DW WKDW VLWH ZDV LPPHGLDWHO\ KDOWHG DQG  
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ZDV PRQLWRUH YLD D IOXRURVFRSH 7KH HQGSRLQW RI WKH WUHDWPHQW ZDV  
MXVW WR ILOO WKH (9 LQFOXGLQJ WKH VXSSO\LQJ YHQRXV FRPSOH[ ZKLFK  
FRPSULVHG WKH OHIW DQG WKH VKRUW JDVWULF YHLQV ZLWK VFOHURVDQW )LJ  
7KH DPRXQW RI (2, LQMHFWRQ YDULHG DFFRUGLQJ WR WKH VWDWXV RI  
(9 EXW WKH PD[LXP GRVH ZDV PO DW RQH (,6 VHVLRQ



)LJXUH UD\ YDULFRJUDSK\ LPDJHV REWDLQHG LQ D UHSUHVHQWDWLYH  
SDWLHQW GXULQJ (,6 LQWHUYHQWLRQ

2Q WKH GD\ IROORZLQJ WKH WUHDWPHQW ZH DVVHVHG WKH VLGH HIIHFW RI  
WUHDWPHQW E\ FRQGFXWLQJ D EORRG ELRFKHPLVWU\ DQDO\VLV FKHVW  
UDGLRJUDSK DQG XULQH WHVW 2QH ZHHN ODWHU HQGRVFRS\ ZDV GRQH WR  
REVHUYH WKH (9 \$GGLWLRQDO (,6 ZDV XQGHUWDNHQ WR WUHDW UHVLGXDO  
YDULFHV WKDW ZHUH GHWHFWHG ZLWKLQ ZHHNV ,Q SDWLHQWV ZLWK HQGRVFR  
HUDGLFDWLRQ RI (9 IROORZ XS HQGRVFRS\ ZDV XQGHUWDNHQ HYHU\  
PRQWKV :KHQHYHU (9 UHFUUHG DGGLWLRQDO (,6 ZDV XQGHUWDNHQ  
)XUWKHU WR HOLPLQDWH WKH UHPDLQLQJ (9 DQG GLODWHG YHLQV ZLWK UHG

)LYH SDWLHQWV ZLWK VSOHQRPJDO\ RPSHULFDWL RGSV ZGHFWURFUHGDXGWRUHWVXP  
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UHSHDWHG (,6 7ZHQW\ IRXU SDWLHQWVKZVWKV RSHDGLFDQV WGVYDFULXFW RDUWHPZDO  
YDULFHV DIWHU UHSHDWHG (,6 GHYHORSHG UHQDOPIUOKD#HZIDQFOXGEGRSRUWDO  
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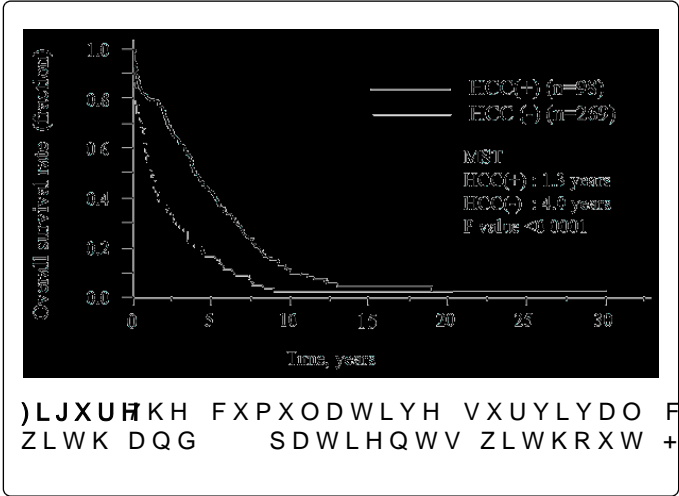
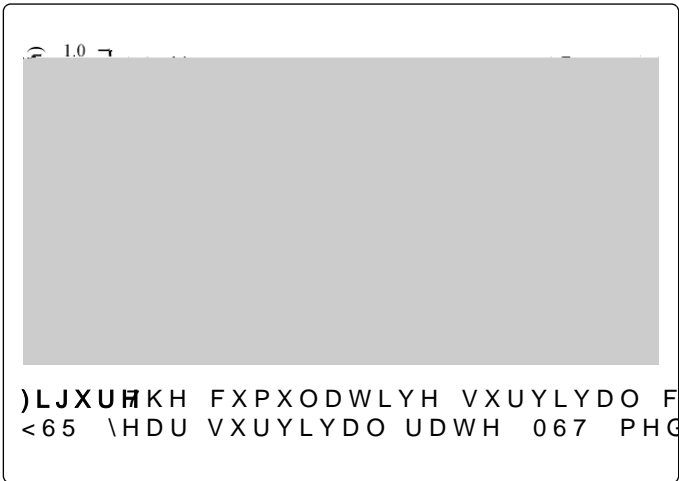
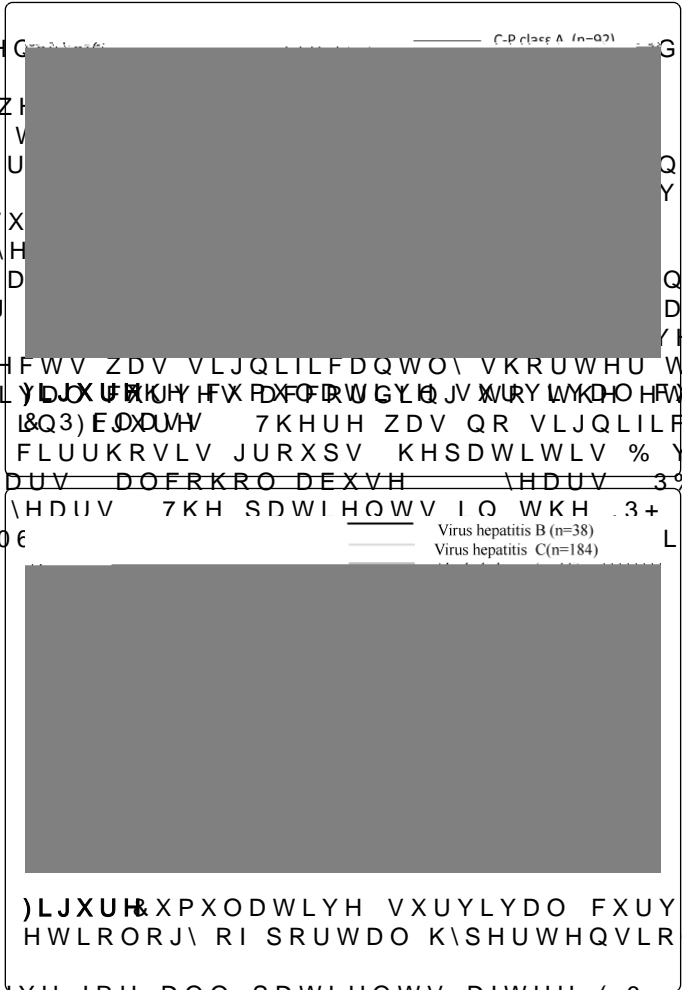
**&RPSOLFDFWLRQV**

7KH PDLQ FRPSOLFDFWLRQV ZHUH VKDOORZ XOFHUV DQG FKHVW SDLQ DW WKH  
VLWH RI LQMHFWRQ \$OO ZHUH PLOG DQG GLVDSSHUHG ZLWKLQ ZHHN 6HULRQ

(OHFWLYH Q(PHUUHQF\ Q 7RWDO Q (OHFWLYH (PHUUHQF\ Q wA „pd € `À wA

6XUYLYDO WLPH

7KH VXUYLYDO FXUYH IRU DOO SDWLHQGV <65 \HDU VXUYLYDO UDWH 067 PHGLDO VXUYLYDO WLPH  
VXUYLYDO WLPH 067 ZDV  
\HDUV DQG WKH VXUYLYDO UDWHV ZHUW DQG DQG \HDUV HDFK 6L[ RI VSOHQHFWRP\ EHIRUH RU DIWHU (.6 VXU  
RI WKHVH VXUYLYHG IRU PRUH WKDQ ZDV VLJQLILFDQWO\ VKRUWHU DPRQJ VXWKDQ WKRVH ZLWKRXW +&& 067  
ZKRP +&& ZDV NHSW XQGHU FRQWURO D \HDUV :KHQ FODVVILHG DFFRUGLQJ \$ % DQG & SDWLHQWV ZDV \HDUV  
7KH VXUYLYDO WLPH RI FODVV & VXEMHFWV ZDV VLJQLILFDQWO\ VKRUWHU WKDQ RI RWKHU SDWLHQWV )LJXUH 6XUYLYDO WLPH RI SRUWDO K\SHUWHQVLRQ DUH VKRZQ GLIIHUHQFH LQ 067 DPRQJ WKH OLYHU  
\HDUV KHSDWLWLW & YLUXV \HDUV DQG XQNQRZQ FDXVHV JURXS KDG D VLJQLILFDQWO\ ORQJHU FLUUKRVLV )LJXUH



)LJXUHKH FXPXODWLYH VXUYLYDO FXUYH IRU DOO SDWLHQWV DIWHU (.6 <65 \HDU VXUYLYDO UDWH 067 PHGLDO VXUYLYDO WLPH  
LVFXVLRQ  
5DGLRORJLFDQO\ JXLGHG (.6 ZLWK WKH FUDGLRJUDSKLF FRQWUDVW DJHQW LV QR SUHYLRXVO\ DV D VWUDWHJ\ WR LQVXUH LWR RXU NQRZOHGJH WKHUH LV QR UHSRULQMHFWHG MXVW WR ILQO WKH (9 LQFOXGLQ WKH 86\$ :H KDYH SUHYLRXVO\ UHSRUWR (.6 LQ WUHDWLQJ WKH VXSSO\LQJ YHLQ  
6LPLQDU GDWD DUH UHSRUWHG E\ 7DNDV , QMHFWLQJ WKH (9 QHDU WKH HVRSKDJRJ ILQO WKH VXSSO\ YHLQ ZLWK DQ DPRXQW 6LPLQDUO\ WKH HQGSRLQW RI LQMHFWLRQ DPRXQW RI VFOHURVDQW WR DYRLG WR[LFXFFHVIXO SULPDU\ KHPRVWDLV UDWH GLIILFXOW WR FRQWURO DFWLYH EOHHGLQJ  
DWHV SDWLHQV (9 UHSRUW) QHGHV WKH RQWURVSHFWLQRLW DQG (.6 ZDV HPHUJLQJ DV D OLIH VDYLQJ EOHHGLQJ > @ 5H EOHHGLQJ HSLVRGHV LQFRPSOHWHO\ HUDGLFDWHG (9 ZLWKLQ \$GGLWLRQDO (.6 WUHDWPHQW OHG WR W LQFOXGLQJ WKH VXSSO\LQJ YHQRXV FRPSOHUH EOHHGLQJ IRU D ORQJ WLPH \$ JDJH VPDOO (9 IURP UHFUXULQJ DJDLQ LQ FR

EOHHGLQJ UDWHV GHFUHDVHG RYHU WLPH ZLWK QR RFFXUUHQFHV LQ SDWLHQW  
ZLWK ORQJHU WKDQ \HDUV VXUYLYDO

6HULRXV FRPSOLFDWLRQV KDYH DOVR EHHQ UHSRUWHG LQ DVVRFLDWLRQ ZLWK  
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SDWLHQWV > @ +RZHYHU ZH IRXQG WKDW RYHUDO (,6 ZLWK D UHGXFHG  
QXPEHU RI SURFHGXUHV ZDV PRWO\ VDIH DQG ZDV ZHOORUDWHG  
5DGLRORJLFDOO\ JXLGHG (,6 ZDV XVHG QRW RQO\ WR REOLWHUDWH WKH (9 EXW  
DOVR WR DYRLG FRPSOLFDWLRQV 0RVW RI WKH FRPSOLFDWLRQV RI WKH (,6  
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PLQLPDO QHHGOH SXQFWXUH ZDV HVVHQWLDO WR DYRLG VHULRXV FRPSOLFDWLRQ  
> @ ,Q SDUWLFXODU ZKHQ SHUWDLQH G WR HVRSKDJHO XOFHU EOHHGLQJ SOH  
HIIXVLRQ OXQJ DEVFHVV SQHXPRWKRUD[ LQWUDPXUDO KHPDWRPD FDUGLDF

YDULFHV DLPLQJ IRU VDIHU DQG PRUH HIIFUDLW B WK HUDS\ PROUWHURYSCHQDO DEHW DO  
6LQJOH DGPWKURPERSEERWQ/V SURJU  
,ZDVH + .\RJDQH . 6XJD 6 0RULVH . (QGRVFRSLF  
XOWUDVRQRJUDSK\ ZLWK FRORU 'RSSOHU IXQFWLRQ LQ WKH GLDJQRVLV RI UHFWD  
YDULFHDO EOHHGLQJ - &OLQ \*D VWURHQWHURO  
%DUE\$VK(KULQSUHLV 01 6XFFHV VIXO HQGRVFRSLF LQMHFWRQ  
VFOHURWKHUDS\ RI D EOHHGLQJ GXRGHQDO YDUL[ \$P - \*D VWURHQWHURO  
/DEHQ]%,UVFK \* 6XFFHV VIXO HQGRVFRSLF KHPRVWDVLV RI GXRGHQDO  
YDULFHDO EOHHGLQJ ZLWK KLVWRDFU\O (QGRVFRS\  
,ZDVH + 6KLPDGD+LUDWXLND 7/RQJ WHUP UHVXOWV  
RI HQGRVFRSLF REOLWHUDWLRQ ZLWK F\DQRDFU\ODWH JOXH IRU JDVWULF IXQGDO  
YDULFHDO EOHHGLQJ D \H DU H[SHULHQFH --31