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N-of-1 Trials of Expensive Biological Therapies: A Third Way (Appendix A - Decision Tree)

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Appendix A. Details of the cost analysis for the base case and for the one-way sensitivity analysis.

<b>Estimated Costs: Base Case</b>						
<b>Strategy</b>		<b>Branch</b>	<b>Description</b>	<b>Prob1</b>	<b>Prob2</b>	<b>Cost</b>
A	Start M; if response inadequate add E; if response still inadequate switch to triple therapy	A1	Mtx	0.35		\$1,308.84
		A2.1	Mtx, M+E	0.65	0.5	\$48,460.23
		A2.2	Mtx, M+E, Trip	0.65	0.5	\$7,169.63
B	Start E; if response inadequate add M; if still inadequate switch to Triple Rx	B1	Etc	0.4		\$51,437.88
		B2.1	Etc, E+Mtx	0.6	0.5	\$52,637.65
		B2.2	Etc, E+Mtx, Trip	0.6	0.5	\$11,345.75
C	Do an n-of-1 trial comparing M vs. E; treat with winner for another 112 weeks; if tie use M; if both fail singly try combination M+E for 13 weeks, treating failures with triple Rx	C1	M wins	0.267		\$6,499.60
		C2	E wins	0.3432		\$42,489.68
		C3	Tie	0.238		\$6,499.60
		C4.1	Both fail individually; combo succeeds	0.1521	0.5	\$43,416.56
		C4.2	Both fail individually; combo fails	0.1521	0.5	\$11,982.08

Estimated Costs: Sensitivity Analyses						
Sensitivity analysis 1: treat n-of-1 ties with combination therapy (most expensive choice) (affects branch C only)						
Strategy		Branch	Description	Prob1	Prob2	Cost
C		C1	M wins	0.267		\$6,499.60
		C2	E wins	0.3432		\$42,489.68
		C3	Tie	0.238		\$43,416.56
		C4.1	Both fail	0.1521	0.5	\$43,416.56
		C4.2		0.1521	0.5	\$11,982.08
Sensitivity analysis 2: use ACR20 as the criterion						
Strategy		Branch	Description	Prob1	Prob2	Cost
A	Start M; if response inadequate add E; if response still inadequate switch to triple therapy	A1	Mtx	0.6		\$1,308.84
		A2.1	Mtx, M+E	0.4	0.75	\$48,460.23
		A2.2	Mtx, M+E, Trip	0.4	0.25	\$7,169.63
B	Start E; if response inadequate add M; if still inadequate switch to Triple Rx	B1	Etc	0.65		\$51,437.88
		B2.1	Etc, E+Mtx	0.4	0.75	\$52,637.65
		B2.2	Etc, E+Mtx, Trip	0.4	0.25	\$11,345.75
C	Do an n-of-1 trial comparing M vs. E; treat with winner for another 112 weeks; if tie use M; if both fail singly try combination M+E for 13 weeks, treating failures with triple Rx	C1	M wins	0.267		\$6,499.60
		C2	E wins	0.3264		\$42,489.68
		C3	Tie	0.3705		\$6,499.60
		C4.1	Both fail individually; combo succeeds	0.0196	0.75	\$43,416.56
		C4.2	Both fail individually; combo fails	0.0196	0.5	\$11,982.08