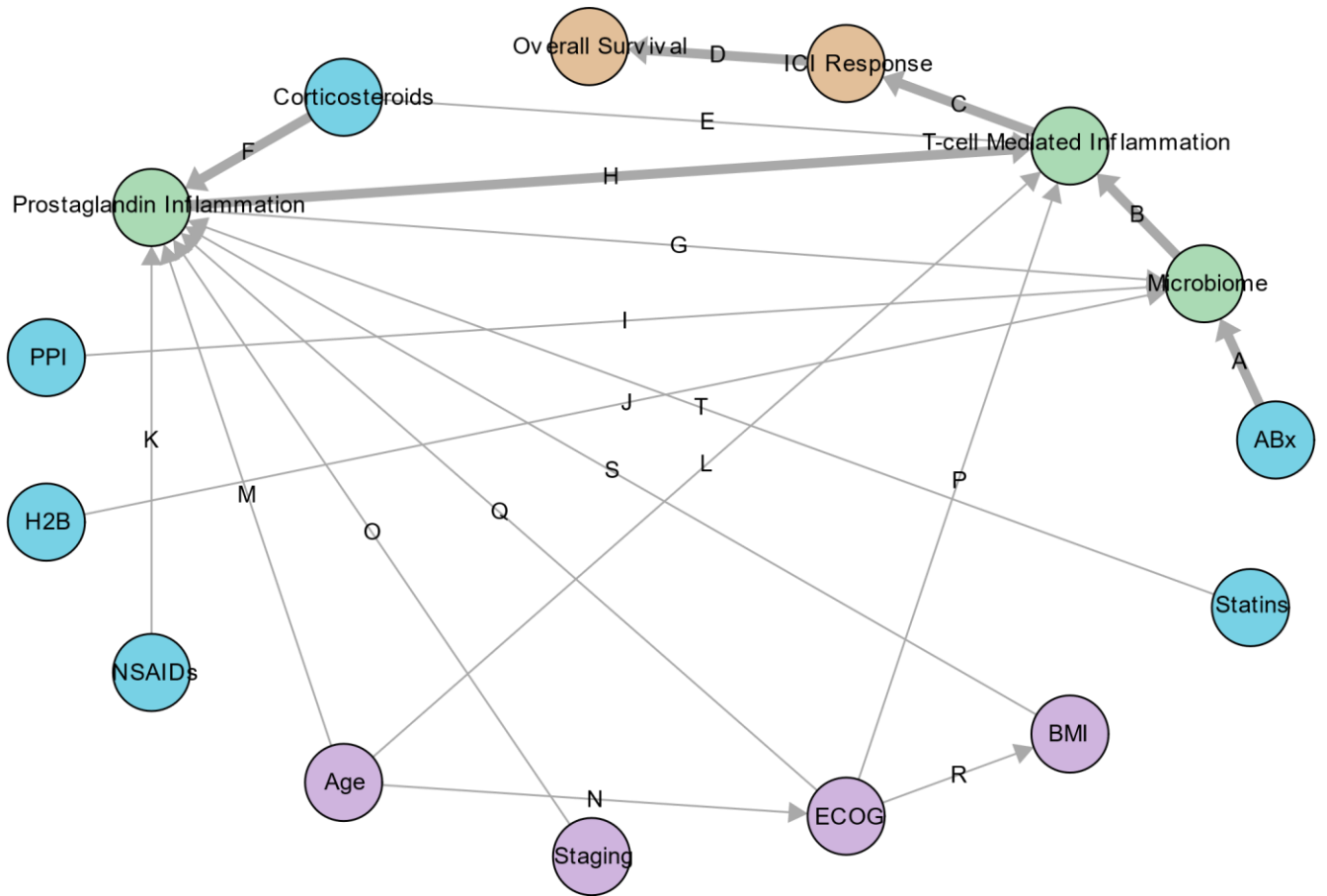


1 **Figure S1: Causal Model with references**



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3 **Table of references for each link:**

Edge Label	Interaction	References
A	ABx > Microbiome	1-4
B	Microbiome > T-cell Mediated Inflammation	1,4,5
C	T –Cell Mediated Inflammation > ICI response	6
D	ICI response > OS	1,4,5
E	CS >T-Cell Mediated Inflammation	7
F	CS > Prostaglandin Inflammation	7
G	Prostaglandin Inflammation > Microbiome	8
H	Prostaglandin Inflammation > T-Cell Mediated Inflammation	9
I	PPI > Microbiome	10-13
J	H2B > Microbiome	13
K	NSAID > Prostaglandin Inflammation	9
L	Age > T-Cell Mediated Inflammation	14
M	Age > Prostaglandin Inflammation	15
N	Age > ECOG	16
O	Staging > Prostaglandin Inflammation	9
P	ECOG > T-Cell Mediated Inflammation	17

Q	ECOG > Prostaglandin Inflammation	17,18
R	ECOG > BMI	19
S	ECOG > Prostaglandin Inflammation	18
T	Statins > Prostaglandin Inflammation	20

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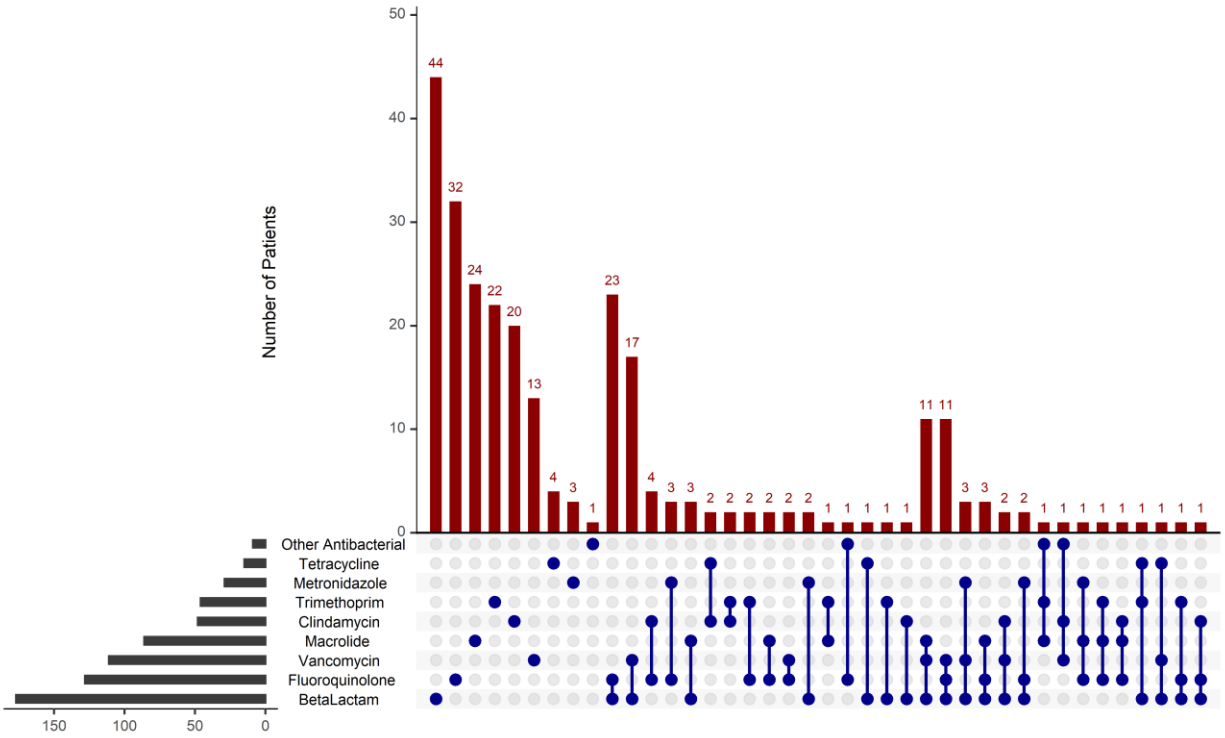
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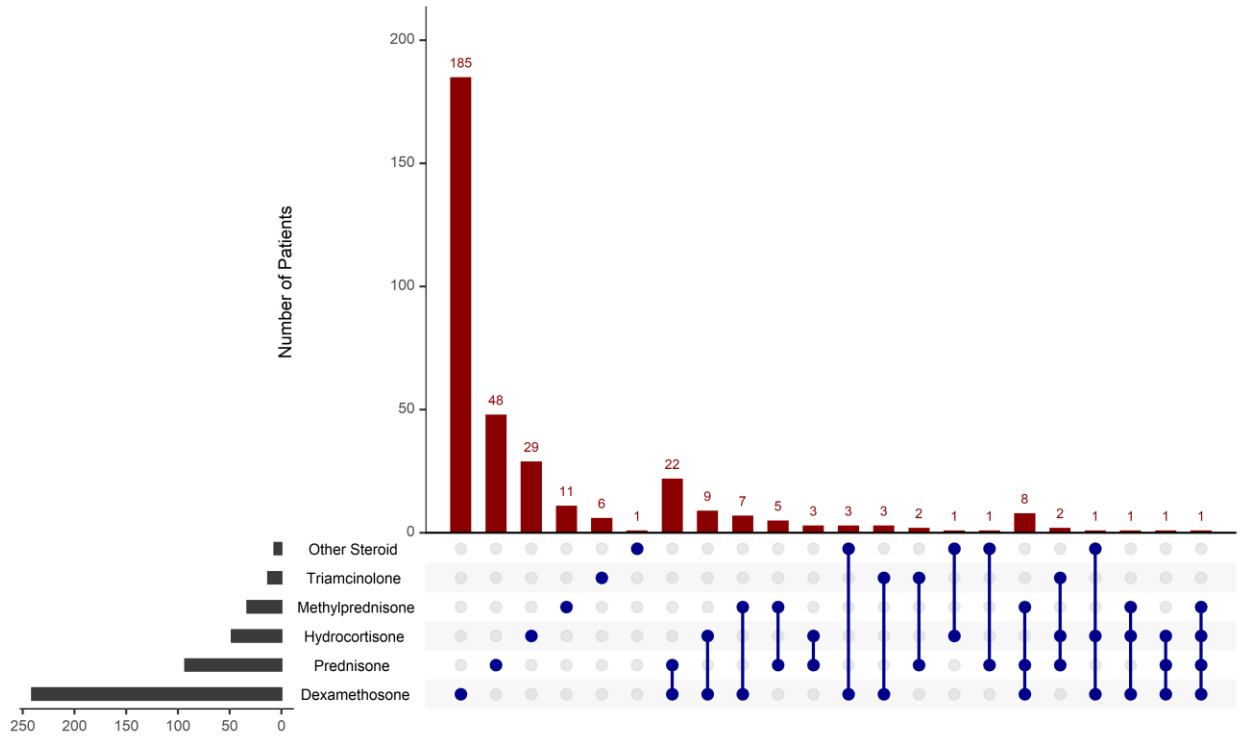
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68 **Figure S2. Number of antibiotics, separated by class, prescribed across all cancers and the frequency**  
 69 **of multiple antibiotics.**



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84 Figure S3. Number of corticosteroids, separated by class, prescribed across all cancers and the  
 85 frequency of multiple antibiotics.



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**Figure S4. Number of medications prescribed across all cancers and the frequency of multiple medications.**

