Procesos de remodelación de ácido araquidónico entre fosfolípidos durante la estimulación fagocítica de macrófagos peritoneales de ratón

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Los macrófagos contienen grandes cantidades de ácido araquidónico (AA), que se distribuye de manera asimétrica entre los fosfolípidos de la membrana. Esto se debe en gran parte a la acción de la transacilasa independiente de coenzima A (CoA-IT), que transfiere el AA principalmente de diacil-fosfolípidos de colina a fosfolípidos que contienen etanolamina. En este trabajo se han analizado comparativamente los cambios en glicerofosfolípidos que ocurren cuando se libera AA de macrófagos peritoneales de ratón en respuesta a zimosán o zimosán opsonizado (OpZ). Estos dos estímulos fagocíticos promueven la movilización dependiente de fosfolipasa A_2 del AA a través de la activación de receptores de superficie distintos. Los estudios por espectrometría de masas revelaron disminuciones significativas en los niveles de todas las especies moleculares mayoritarias de fosfolípidos de colina y una especie de fosfatidilinositol. Es importante destacar que, si bien no se detectaron cambios en las especies de fosfolípidos de etanolamina durante la estimulación con zymosan, sí se observaron disminuciones significativas en estas especies cuando se utilizó OpZ. Los análisis de la remodelación de AA mediada por CoA-IT revelaron que el proceso se produce más rápidamente en células estimuladas por zymosan en comparación con las células estimuladas por OpZ. La inhibición farmacológica de CoA-IT inhibió fuertemente la liberación de AA en respuesta a zimosán, pero sólo tuvo un efecto moderado en la respuesta mediada por OpZ. Estos resultados sugieren un papel hasta ahora no descrito, dependiente de receptor, para las reacciones de remodelación de AA independientes de CoA en la modulación de la producción de eicosanoides por los macrófagos. Estos datos ayudan a definir nuevos objetivos dentro de la vía de remodelación de AA con posible valor potencial para el control de la formación de mediadores de lípidos.

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