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研究課題名(和文)ロコモティブシンドロームの疫学指標の解明による要介護予防戦略の確立

研究課題名(英文)Prevalence and incidence of locomotive syndrome components and its association with disability.

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研究成果の概要(和文)：運動器障害予防のために設立された大規模住民コホート研究ROADにおいて追跡調査を行い、わが国における大腿骨骨粗鬆症(OP)の有病者数を1280万人、変形性膝関節症(KOA) 2530万人、変形性腰椎症(LS) 3790万人、これらのいずれかを持つものは4700万人と推定した。さらにわが国におけるOP(大腿骨頸部)、KOA、LSの年間累積発生率をそれぞれ年間1.8%、3.3%、11.4%と推定した。ロコモと他の要介護原因疾患との関連については、メタボ構成要素の数を多く持てば持つほどKOAのリスクが増加すること、軽度認知障害がKOAの発生リスクを4.9倍あげてを明らかにした。

研究成果の概要(英文)：The prevalence of osteoporosis (OP) and osteoarthritis (OA), and the number of people affected with these diseases in Japan, were estimated in the population-based cohort study entitled research on osteoarthritis/osteoporosis against disability (ROAD). The annual cumulative incidences of osteoporosis at lumbar spine L2-4 and the femoral neck were 0.76%/y and 1.83%/y, respectively. The cumulative incidences of knee osteoarthritis (KOA) and lumbar spondylosis were 3.3%/y and 11.4%/y, respectively. After assessing the associations among the diseases causing disability, including musculoskeletal diseases, metabolic syndrome (MS) components, and cognitive impairment, it was found that the occurrence of KOA significantly increased according to the number of MS components present. Similarly, mild cognitive impairment significantly increased the risk of occurrence of KOA.

研究分野：疫学

キーワード：医療・福祉 老化 疫学 ロコモティブシンドローム 要介護 発生率 危険因子 コホート研究

1. 研究開始当初の背景

日本人の平均寿命は過去 60 年で約 30 年延伸し、平成 25 年には 4 人に 1 人が高齢者という超高齢社会となっている。しかし平均寿命の延伸は、高齢者の要介護や寝たきりの問題をもクローズアップすることになった。介護保険事業状況報告によると、平成 22 年度末の要介護認定者は 506 万人となり、介護保険制度開始後の平成 12 年度の 256 万人から 10 年で 2 倍と著しい増加を認めている。要介護になった理由について、平成 22 年厚生労働省国民生活基礎調査の概況をみると、1 位脳血管障害、2 位認知症、3 位高齢による衰弱となるが、4 位に関節疾患、5 位に転倒・骨折と運動器疾患が続いている。4 位と 5 位の頻度をあわせれば 1 位の脳血管障害にほぼ匹敵する値となり、運動器疾患の予防は待たなしの状況である。日本整形外科学会は、運動器の障害のために要介護となる危険の高い状態をロコモティブシンドローム(ロコモ)と定義し、疾病横断的に要介護の予防対策に乗り出したが、ロコモ構成要素それぞれの頻度やその関連因子についてはまだ不明な点が多い。

2. 研究の目的

運動器障害予防のために設立された大規模住民コホート研究 Research on Osteoarthritis/osteoporosis Against Disability (ROAD)において、対象者に 3 回目の追跡調査を行い、骨、関節のみならず筋量、筋力やバランス能力検査も行い、ロコモティブシンドローム(ロコモ)の疫学的実態を明らかにすることを目的とする。さらに過去 2 回の検診結果とあわせて骨粗鬆症(OP)と骨折、変形性関節症(OA)の有病率、発生率、増悪率、要介護移行率や生命予後を明らかにする。血液検査、体格測定、認知機能検査結果も加え、メタボリック症候群や認知症など他の要介護原因疾患との相互作用、因果関係を同定する。

3. 研究の方法

3 年ごとに追跡調査を行っている ROAD では、平成 23 年度に山村コホート、平成 24 年度に漁村コホート、平成 23-25 年にかけて都市部コホートで 6 年目の第 3 回調査を実施した。今回の追跡調査においては、ロコモ構成要素の指標である筋量、筋力、開眼片足立ち時間、平衡機能検査も測定した。これにより OP、OA、SP、およびロコモの有病率を推定した。さらに、過去 2 回の検診結果とのデータリンクを行い、ロコモ原因疾患としての OP、OA、SP の発生率、要介護移行率、死亡率を推定しロコモ早期発見のための関連要因を明らかにした。さらに、メタボリック症候群や認知症など他の要介護原因疾患との相互作用、因果関係についても検討した。

4. 研究成果

ROAD ベースライン調査結果の解析により、

わが国における OP の有病者数を 1070 万人、変形性膝関節症(KOA) 2530 万人、変形性腰椎症(LS)3790 万人、これらのいずれかを持つものは 4700 万人と推定した。さらにわが国における KOA と LS の年間累積発生率をそれぞれ年間 3.3%、11.4%と推定した。要介護原因であるロコモとメタボの関連については、肥満、耐糖能異常、脂質異常、高血圧のメタボ構成要素をひとつももたないものを基準にすると、1 つ持つものでオッズ比が 2.3、2 つで 2.8、3 つ以上メタボの要因を持つものでは 9.8 となり、メタボ構成要素の数を多く持てば持つほど KOA のリスクが増加することを明らかにした。ロコモと認知症については、認知症の前駆状態と考えられる軽度認知障害(MCI)と KOA の関連について、MCI が KOA 発生リスクを 4.9 倍あげて示した。

5. 主な発表論文等

(研究代表者、研究分担者及び連携研究者には下線)

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〔産業財産権〕

- 出願状況（計 0 件）
- 取得状況（計 0 件）

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なし