Table S1: Criteria for risk of bias assessment of case-control studies

1. Can we be confident about the exposure assessment?	
Definitely yes	There is no situation to be considered as "definitely yes" because case-control studies are retrospective and exposures might have happened long time before recruitment of participants. Thus, the analysis of fluids (blood/urine) to assess paraquat internal dose probably wouldn't reveal the past exposures.
Probably yes	Exposures were assessed by occupational exposure matrix, occupational exposure assessment by a certified industrial hygienist/agronomist/epidemiologist or georeferencing coding systems, **AND** Assessors and subjects were blinded to the study hypothesis or to the case status of participants, **OR** Exposures were reported by the participants in structured interviews/questionnaires, **AND** Assessors and subjects were blinded to the study hypothesis or to the case status of participants, **AND** If the authors reported details, such as frequency (days/year), duration (hours/year), method (portable, tractor), and years (beginning/end) of paraquat use.
Probably not	Exposures were assessed by occupational exposure matrix, occupational exposure assessment by a certified industrial hygienist/agronomist/epidemiologist or georeferencing coding systems, **AND** Assessors and subjects were clearly not blinded to the study hypothesis or to the case status of participants, **OR** Exposures were reported by the participants in structured interviews/questionnaires, **AND** Assessors and subjects were blinded to the study hypothesis or to the case status of participants,

	AND Authors did not inform if interviews/questionnaires covered details, such as frequency (days/year), duration (hours/year), method (portable, tractor), and years (beginning/end) of paraquat use.
Definitely not	Exposures were reported by the participants in structured interviews/questionnaires, **AND** Assessors and subjects were clearly not blinded to the study hypothesis or to the case status of participants, **AND** Authors did not inform if interviews/questionnaires covered details, such as frequency (days/year), duration (hours/year), method (portable, tractor), and years (beginning/end) of paraquat use.
2. Can we be confident about PD diagnosis?	
Definitely yes	An accurate PD diagnosis should correlate data from autopsy findings and clinical symptoms (Hughes et al. 1992a). Since it is not possible to account for histopathological analyses, a "definitely yes" was considered when PD was based on clinical features, diagnosed by a neurologist who examined each case at recruitment, according to the criteria adapted from the UK PDS Brain Bank[a] (Hughes et al. 1992b).
Probably yes	Cases were evaluated by neurologists or trained health professionals at least once, not necessarily at recruitment (e.g., recruited from movement disorder clinics or hospitals), **AND** At least the following criteria were specified: (I) at least two of the four cardinal signs of PD (bradykinesia, resting tremor, postural instability and rigidity), (II) without early atypical features that might support differential diagnoses, and (III) no evidence of other possible causes of parkinsonism that may explain the patient's symptoms (e.g., drug-induced, head trauma, brain tumor, infections), **OR** Diagnostic criteria were not described in detail, but it points to PD.
Probably not	Cases assessed by neurologists/trained health professionals or recruited from neurological clinics, **AND** Diagnostic criteria were not mentioned.

Definitely not	Cases randomly recruited from telephone lists or electoral zones, and the PD diagnoses were reported by the participants in questionnaires or interviews, **OR** When clearly only parkinsonism was investigated.
3. Were the cases properly selected?	
Definitely yes	Cases selected from a specific catchment area, **AND** Cases were selected in a given time frame, **AND** The criteria used for PD diagnosis did not change from the study period up to the moment of this review.
Probably yes	The criteria used for PD diagnosis did not change to up to the moment of this review, **AND** Cases were selected from a specific catchment area, **AND** The time frame was not clearly stated.
Probably not	Criteria used for PD diagnosis did not change up to the moment of this review, **AND** There was clear evidence that cases were not selected from a defined catchment area, **OR** Cases were clearly selected from very different time frames.
Definitely not	Criteria used for PD diagnosis changed from the study period up to the moment of this review, **OR** There was clear evidence that the cases were from different populations (urban vs. rural).
4. Can we be confident that controls did not have PD?	
Definitely yes	Controls evaluated by a neurologist who confirmed that there was no PD or any neurodegenerative disease at recruitment.
Probably yes	Controls were selected from pharmacy databases, neurological clinics or hospitals for the treatment of non-neurodegenerative diseases, **OR**

	Controls randomly recruited from telephone lists or others, and participants with any type of neurodegenerative disease were excluded.
Probably not	Controls were recruited from neurological clinics/health insurance databases, **AND** It was not clear whether they had any type of other neurodegenerative diseases.
Definitely not	Controls randomly recruited from telephone lists or others, **AND** It was not clear whether they had any type of other neurodegenerative diseases.
5. Were the controls properly selected?	
Definitely yes	Controls selected from the same population as the cases (same time frame and same location/practice), **AND** They were equally at risk of exposure to paraquat (environmentally and occupationally) as the cases.
Probably yes	Controls selected from the same location/practice as the cases, **AND/OR** The time frame information was not clearly stated, **AND/OR** They were not equally at risk of exposure to paraquat as the cases.
Probably not	There was clear evidence that they were not selected from the same location as the cases, **OR** There is clear evidence that they were not selected from the same time frame as the cases.
Definitely not	Controls were clearly recruited within very different geographic regions as the cases, **AND** Controls were clearly recruited within very different time frames.
6. Were cases and controls matched according to important prognostic variables or was statistical adjustment carried out for those variables?	

Definitely yes	When the authors adjusted for all the following variables: age, sex, duration of exposure, rural life, well water consumption, smoking, use of personal protective equipment (PPE), and family history of PD.
Probably yes	When the authors considered at least the variables "age", "sex", “duration of exposure”, and "smoking" in the adjustments.
Probably not	When the authors considered only the variables "age", and "sex" and “smoking” in the adjustments**.**
Definitely not	When the above variables were not considered.

[a] First step, diagnosis of a parkinsonian syndrome characterized by: bradykinesia and at least one of the following: muscular rigidity, resting tremor (4–6 Hz) or postural instability unrelated to primary visual, cerebellar, vestibular or proprioceptive dysfunction. Second step (exclusion criteria for PD): repeated strokes with stepwise progression, repeated head injury, use of antipsychotic or dopamine-depleting drugs, definite encephalitis and/or oculogyric crises on no drug treatment, sustained remission, negative response to large doses of levodopa (if malabsorption excluded), strictly unilateral features after 3 years, other neurological features, such as supranuclear gaze palsy, cerebellar signs, Babinski sign (plantar reflex), early severe dementia with disturbances of language, memory or praxis, presence of a tumor and exposure to a known neurotoxin. Third step (supportive criteria for PD): when there are three or more fulfilled items - unilateral onset, resting tremor, progressive disorder, persistent asymmetry affecting mostly the side of onset (if patients were not submitted to surgery and to the use of neurostimulator devices), and excellent response to levodopa (Hughes et al. 1992b).